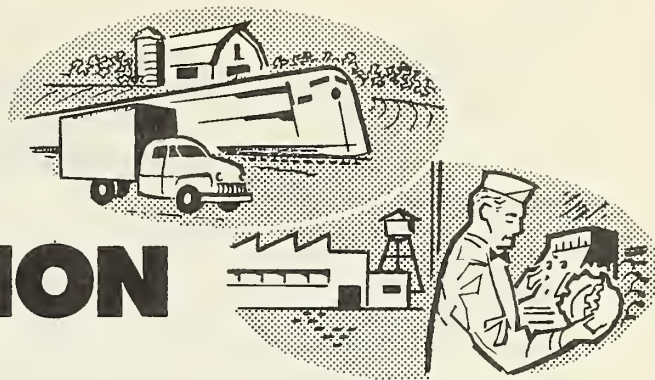


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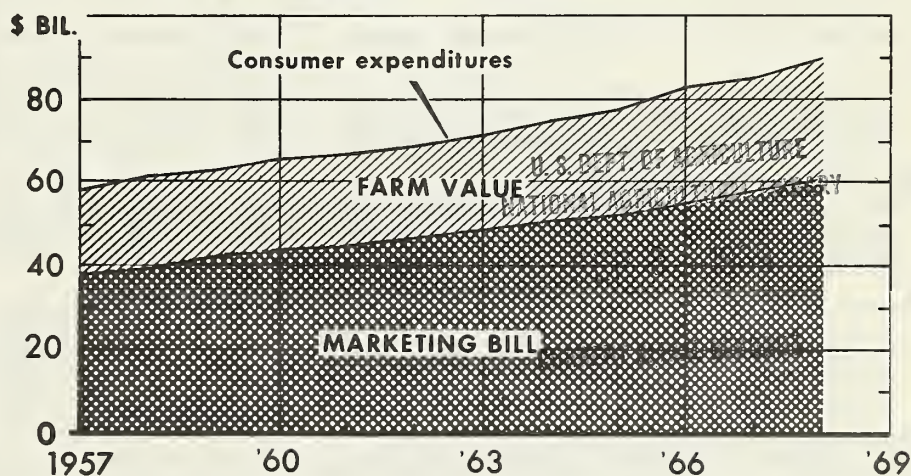
MARKETING and TRANSPORTATION SITUATION



MTS - 174

AUGUST 1969

FARM-FOOD MARKETING BILL AND CONSUMER FOOD EXPENDITURES



FOR ALL DOMESTIC FARM FOODS PURCHASED BY U.S. CIVILIANS FOR CONSUMPTION, BOTH AT HOME AND AWAY FROM HOME.

U.S. DEPARTMENT OF AGRICULTURE

NEG. ERS 5664-69 (2) ECONOMIC RESEARCH SERVICE

IN THIS ISSUE

The Bill for Marketing Farm-Food Products

Implications of Change in the
Tobacco Economy

Dehydrated Foods--A Market Perspective

Demurrage and the Freight Car Situation

Published Quarterly by
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U.S. DEPARTMENT OF AGRICULTURE

STATISTICAL SUMMARY OF MARKET INFORMATION

Item	Unit or base period	1968			1969	
		Year	Apr.-June	Oct.-Dec.	Jan.-Mar.	Apr.-June
<u>Farm-to-retail price spreads</u>						
Farm-food market basket: 1/						
Retail cost	Dol.	1,118	1,114	1,128	1,138	1,161
Farm value	Dol.	435	436	433	453	477
Farm-retail spread	Dol.	683	678	695	685	684
Farmer's share of retail cost	Pct.	39	39	38	40	41
<u>General economic indicators</u>						
Consumers' per capita income and expenditures: 2/						
Disposable personal income	Dol.	2,933	2,924	2,991	3,016	3,070
Expenditures for goods and services	Dol.	2,668	2,640	2,726	2,776	2,812
Expenditures for food	Dol.	494	494	498	506	503
Expenditures for food as percentage of disposable income	Pct.	16.8	16.9	16.6	16.8	16.4
		1968		1969		
		Year	June	April	May	June
Hourly earnings of employees, private nonagricultural sector 3/.....	Dol.	2.85	2.85	3.00	3.02	3.02
Hourly earnings of food marketing employees 4/.....	Dol.	2.67	2.67	2.81	2.83	2.82
Retail sales: 5/						
Food stores	Mil. dol.	6,106	6,172	6,263	6,312	6,240
Apparel stores	Mil. dol.	1,605	1,595	1,762	1,665	1,656
Manufacturers' inventories: 5/						
Food and kindred products	Mil. dol.	7,370	7,262	7,313	7,416	7,500
Textile mill products	Mil. dol.	3,539	3,440	3,577	3,565	3,525
Tobacco products	Mil. dol.	2,261	2,278	2,203	2,209	2,220
Indexes of industrial production: 6/						
Food manufactures	1957-59=100	132.7	132.2	136.6	136.6	---
Textile mill products	1957-59=100	151.3	148.8	154.1	155.2	---
Apparel products	1957-59=100	149.9	151.4	151.3	---	---
Tobacco products	1957-59=100	120.9	122.8	110.5	---	---
Index of physical volume of farm marketings	1957-59=100	126	109	94	98	108
<u>Price indexes</u>						
Consumer price index 7/.....	1957-59=100	121.2	120.9	126.4	126.8	127.6
Wholesale prices of food 8/.....	1957-59=100	112.2	112.3	115.4	119.0	119.9
Wholesale prices of cotton products 7/.....	1957-59=100	105.1	104.7	104.5	104.6	104.5
Wholesale prices of woolen products 7/.....	1957-59=100	103.7	103.8	104.3	104.3	105.0
Prices received by farmers	1957-59=100	108	107	112	117	117
Prices paid by farmers, interest, taxes, and wage rates	1957-59=100	121	121	127	128	128

1/ Contains average quantities of farm-originated foods purchased annually per household in 1960-61 by wage-earner and clerical-worker families and single workers living alone. 2/ Seasonally adjusted annual rates, calculated from Dept. of Commerce data. Percentages have been calculated from total income and expenditure data. 3/ Average hourly earnings of production workers in mining and manufacturing; construction workers in contract construction; nonsupervisory workers in wholesale and retail trade, finance, insurance, real estate, transportation, public utilities and services, Dept. of Labor. 4/ Weighted composite earnings in food processing, wholesale trade, retail food stores, calculated from data of Dept. of Labor. 5/ Seasonally adjusted, Dept. of Commerce. Sales data for 1968 are averages of monthly totals (unadjusted). Inventory data for 1968 are book values at end of year (adjusted). 6/ Seasonally adjusted, Board of Governors of Federal Reserve System. 7/ Dept. of Labor. 8/ Fresh and dry fruits and vegetables, eggs, and processed foods; Dept. of Labor.

MARKETING AND TRANSPORTATION SITUATION

Approved by the Outlook and Situation Board, August 8, 1969

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SUMMARY *

Strong consumer demand spurred the retail cost of a market basket of farm-originated foods to an annual rate of \$1,161 in the second quarter of 1969, up 2.0 percent from the previous quarter and 4.2 percent over a year earlier. Higher meat prices led the upswing. The retail cost has risen in all but 3 of the past 18 months.

The farm value (gross return to farmers) of foods in the market basket averaged \$477 in the second quarter, 5.4 percent higher than in the first. The increase resulted from sharply higher prices for meat animals and moderate increases for many other food commodities. Increases were partially offset by sharply declining prices for eggs and a few other products.

Returns to farmers for market-basket foods in the second quarter of 1969 were up 9.3 percent from a year earlier. Animal products accounted for most of the increase.

Marketing charges, as measured by the spread between the retail cost and farm value of the market basket, averaged \$684 in the second quarter--about 0.2 percent lower than in the previous quarter. Spreads for meat products narrowed sharply. Compared to a year earlier, spreads in the second

quarter averaged about 1.0 percent wider.

Farmers received an average of 41 cents of the dollar consumers spent for farm foods in the second quarter. This was 1 cent more than in the previous quarter and 2 cents more than a year earlier. The farmer's share has averaged 40 cents or more in 8 of the past 40 quarters--2 of these in 1969.

Marketing spreads are expected to widen during the last half of the year. Thus, some further increase in retail food prices is expected despite an anticipated weakening in returns to farmers. For the year, the retail cost of the market basket of farm foods probably will average around 4 percent higher than a year earlier.

Marketing bill and food expenditures: The marketing bill--an estimate of all costs and profits incurred in transporting, processing, wholesaling, and retailing farm-food products--amounted to \$60.6 billion in 1968, up by 5 percent over 1967. Labor costs, nearly half of the bill, accounted for two-thirds of the increase. Increases also occurred for other components such as transportation, depreciation, rent, interest, and advertising. Profits that corporate firms

*The summary of this report and a summary table were released to the press on August 8, 1969.

derived from marketing farm-foods rose sharply in 1968 following a dip in 1967.

Farmers received \$28.9 billion for farm-food products in 1968, up by \$1.6 billion over 1967. Farm prices of food products, which declined in 1967, rose by almost 5 percent in 1968.

Consumers spent \$89.5 billion on farm foods last year, an increase of \$4.7 billion

over 1967. An increase of nearly 4 percent in U.S. farm-food prices, reflecting the increase in marketing costs and farm prices, caused most of the increase in expenditures.

The proportion of disposable income spent for all food declined again in 1968. Food expenditures accounted for 16.8 percent last year, compared with 17.1 in 1967.

FARM-FOOD MARKET BASKET STATISTICS

Retail Cost: Strong consumer demand strengthened by higher personal incomes boosted retail prices for farm-originated foods in the second quarter of 1969. Increases were particularly sharp in May and June. Much of the increase reflected higher prices for meats. The rise in retail food costs in the second quarter continued a general uptrend which began in late 1967 (table 1).

The retail cost of the market basket of farm-originated foods ¹/averaged \$1,161 (annual rate) in the second quarter of 1969 --up 2 percent from the previous quarter (table 2). Retail costs for all product groups, except eggs, increased from the first to the second quarter. Prices of meats, poultry, and fresh fruits and vegetables jumped sharply.

Compared with the second quarter last year, the retail cost of the market basket averaged 4.2 percent higher. Animal products rose the most. Retail costs for other product groups except fresh fruits and fats and oils also rose.

Farm Value: The farm value of the market basket averaged \$477 (annual rate) in the second quarter, up \$24 or 5.4 percent from the first quarter (table 20, p.36).

The increase resulted from sharply higher returns to farmers for meat animals and moderate increases in returns for many other commodities in the market basket. In contrast, prices for eggs declined sharply.

Compared with a year earlier, returns to farmers for market-basket foods were up 9.3 percent. Higher prices for animal products accounted for most of the increase. In contrast, total returns to farmers for crop products were down mainly because of lower prices for fresh fruits and vegetables.

Farm-Retail Spread: Although prices generally increased sharply at both farm and retail levels from the first to the second quarter, the spread between the retail cost and the farm value of the market basket foods decreased about 0.2 percent. Meat products accounted for most of the decrease. Generally, spreads for meats decrease when returns for meat animals rise rapidly. Spreads for dairy products, eggs, and processed fruits and vegetables also decreased. These decreases were partially offset by widening spreads for other product groups (table 21, p.37).

The total marketing spread for the market basket widened 1.0 percent over the

¹/ The market basket contains the average quantities of domestic, farm-originated food products purchased annually per household in 1960 and 1961 by wage-earners and clerical-worker families and single workers living alone. Its retail cost is calculated from retail prices published by the Bureau of Labor Statistics. The retail cost of the market basket foods is less than the cost of all foods bought per household, since it does not include costs of meals in eating places, imported foods, seafoods or other foods not of farm origin. The farm value is the gross return to farmers for the farm products equivalent to foods in the market basket. The farm-retail spread--the difference between the retail cost and farm value is an estimate of total gross margin received by marketing firms for assembling, processing, transporting, and distributing the products in the market basket.

Table 1.--The market basket of farm foods: Retail cost, farm value, farm-retail spread, and farmer's share of retail cost, averages 1947-49 and 1957-59 annual 1958-68, monthly 1968-69 1/

Year and month	Retail cost	Farm value	Farm-retail spread	Farmer's share
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Percent</u>
Average:				
1947-49	890	441	449	50
1957-59	983	388	595	39
1958	1,009	407	602	40
1959	985	377	608	38
1960	991	383	608	39
1961	997	380	617	38
1962	1,006	384	622	38
1963	1,013	374	639	37
1964	1,014	374	640	37
1965	1,038	408	630	39
1966	1,095	443	652	40
1967	1,080	414	666	38
1968 <u>2/</u>	1,118	435	683	39
1968 <u>2/ 3/</u>				
January	1,098	418	680	38
February	1,100	425	675	39
March	1,104	432	672	39
April	1,110	439	671	40
May	1,114	436	678	39
June	1,117	435	682	39
July	1,124	450	674	40
August	1,132	439	693	39
September ...	1,128	443	685	39
October	1,131	433	698	38
November	1,125	429	696	38
December	1,129	436	693	39
1969 <u>2/ 3/</u>				
January	1,138	446	692	39
February	1,136	452	684	40
March	1,141	460	681	40
April	1,148	465	683	40
May	1,157	472	685	41
June	1,176	495	481	42

1/ Retail cost of average quantities purchased annually per household in 1960-61 by urban wage-earner and clerical-worker families and single workers living alone, calculated from retail prices collected by the Bureau of Labor Statistics. Data for earlier years are published in Farm-Retail Spreads for Food Products 1947-64, ERS-226, April 1965.

2/ Preliminary.

3/ Annual rates.

Table 2.--The market basket of farm foods: Retail cost, farm value, and farm-retail spread, April-June 1969, January-March 1969, and April-June 1968

Items	April- June 1969	January- March 1969	April- June 1968	Change: April-June 1969 from			
				January-March 1969		April-June 1968	
	Dol.	Dol.	Dol.	Dol.	Pct.	Dol.	Pct.
Retail cost <u>1/</u>							
Market basket	1,160.88	1,138.13	1,113.59	22.75	2.0	47.29	4.2
Meat products	349.90	332.18	322.23	17.72	5.3	27.67	8.6
Dairy products	206.63	205.54	200.96	1.09	.5	5.67	2.8
Poultry	50.07	48.18	48.01	1.89	3.9	2.06	4.3
Eggs	39.90	45.88	34.06	-5.98	-13.0	5.84	17.1
Bakery and cereal : products	172.13	171.22	168.93	.91	.5	3.20	1.9
Fresh fruits	51.33	48.64	53.61	2.69	5.5	-2.28	-4.3
Fresh vegetables ..	77.28	74.56	75.78	2.72	3.6	1.50	2.0
Processed fruits : and vegetables ..	124.95	123.86	123.00	1.09	.9	1.95	1.6
Fats and oils	37.84	37.77	37.95	.07	.2	-.11	-.3
Miscellaneous : products	50.85	50.30	49.06	.55	1.1	1.79	3.6
Farm value <u>2/</u>							
Market basket	477.18	452.78	436.38	24.40	5.4	40.80	9.3
Meat products	204.18	179.65	171.74	24.53	13.7	32.44	18.9
Dairy products	100.20	98.78	96.24	1.42	1.4	3.96	4.1
Poultry	24.65	24.60	24.01	.05	.2	.64	2.7
Eggs	24.78	29.99	20.07	-5.21	-17.4	4.71	23.5
Bakery and cereal : products	33.85	33.11	33.52	.74	2.2	.33	1.0
Fresh fruits	17.27	16.57	19.85	.70	4.2	-2.58	-13.0
Fresh vegetables ..	25.35	24.37	25.62	.98	4.0	-.27	-1.1
Processed fruits : and vegetables ..	27.39	26.06	26.02	1.33	5.1	1.37	5.3
Fats and oils	10.17	10.31	10.36	-.14	-1.4	-.19	-1.8
Miscellaneous : products	9.34	9.34	8.95	0	0	.39	4.4
Farm-retail spread							
Market basket	683.70	685.35	677.21	-1.65	-.2	6.49	1.0
Meat products	145.72	152.53	150.49	-6.81	-4.5	-4.77	-3.2
Dairy products	106.43	106.76	104.72	-.33	-.3	1.71	1.6
Poultry	25.42	23.58	24.00	1.84	7.8	1.42	5.9
Eggs	15.12	15.89	13.99	-.77	-4.8	1.13	8.1
Bakery and cereal : products	138.28	138.11	135.41	.17	.1	2.87	2.1
Fresh fruits	34.06	32.07	33.76	1.99	6.2	.30	.9
Fresh vegetables ..	51.93	50.19	50.16	1.74	3.5	1.77	3.5
Processed fruits : and vegetables ..	97.56	97.80	96.98	-.24	-.2	.58	.6
Fats and oils	27.67	27.46	27.59	.21	.8	.08	.3
Miscellaneous : products	41.51	40.96	40.11	.55	1.3	1.40	3.5

1/ Retail cost of average quantities purchased annually per household in 1960-61 by urban wage-earner and clerical-worker families and single workers living alone, calculated from retail prices collected by the Bureau of Labor Statistics.

2/ Payment to farmers for equivalent quantities of farm products minus imputed value of byproducts obtained in processing.

second quarter of 1968. Marketing spreads increased for all product groups except meat products and fresh fruits.

Farmer's Share: In the second quarter this year, farmers received an average of 41 cents of the dollar consumers spent for domestic farm foods in retail food stores. This was 1 cent more than in the previous quarter and 2 cents more than a year earlier. During the 10 years ended in June 1969, the quarterly average farmer's share varied from 36 to 42 cents. It averaged 40 cents or higher in 8 quarters of this period. Two of these were in 1969.

Outlook: Food prices during the remainder of the year are expected to average slightly above the second quarter level even though returns to farmers may weaken. Operating costs of marketing firms, such as for wages and materials, are expected to continue to exert an upward pressure on marketing spreads and in turn on retail food prices. For the year, the retail cost of the market basket of farm foods will probably average about 4 percent higher than a year earlier.

Commodity Highlights

Beef: Prices Up, Supply and Spreads Decrease: Continued strong consumer demand and slightly reduced supplies of beef in the second quarter lifted beef prices at all levels over first quarter levels. The retail price of Choice beef averaged 95.8 cents per pound in the second quarter--up 5.8 cents from the first quarter (table 3). The farm value increased 7.1 cents. This rise was only partially reflected in the retail price because the farm-retail spread decreased. A decrease in the wholesale-retail spread indicated that retailers did not respond immediately to increases at wholesale and farm levels. Spreads frequently decrease during a period of rapidly rising farm prices because of a lag in retail response. The farm-wholesale spread increased in the second quarter after having decreased sharply in the first quarter. In the second quarter, commercial production of beef was about 1 percent below a year earlier.

Pork: Prices Up, Spreads Decrease:

The retail price of pork averaged 69.9 cents per pound in the second quarter--up 2.2 cents from the previous quarter and 3.5 cents above a year earlier. The farm value of pork increased more than the retail price; thus, the farm-retail spread declined. Both whole-sale-retail and farm-wholesale segments of the spread decreased in the second quarter from the first quarter and from a year earlier. Commercial pork production was almost 1 percent smaller in April-June of this year than in the same period of 1968.

Frying Chickens: Spreads Up, Farm

Value Steady: Demand for broilers increased in the second quarter as prices for red meat rose. Although production of broilers was 10 percent greater in the second quarter than a year earlier, the farm value remained at the first quarter level--20.4 cents--slightly higher than a year earlier. Retail prices rose to 41.9 cents per pound in the second quarter--up 1.8 cents from both the first quarter and from a year ago. Because retail prices increased more than returns to farmers, the farm-retail spread increased 1.8 cents or 9 percent from the previous quarter and 1.4 cents or 7 percent from a year earlier. (tables 20 and, 21, pp 36 and 37)

Eggs: Prices and Spreads Decrease:

As production of eggs increased from the first to the second quarter to near the year-earlier level, prices at both farm and retail declined sharply. The retail price for Grade A large eggs averaged 55.3 cents per dozen in the second quarter--down 8.3 cents from the first quarter but up 8.1 cents from a year earlier. (table 20, p. 36) Changes at the farm level were not as great as at retail; therefore the farm-retail spread decreased from the first quarter but averaged wider than a year earlier. Price decreases in the second quarter were greater than seasonal, having descended from an unusually high level.

Table 3.--Beef, pork, and lamb: Retail price, wholesale value, farm value, farm-retail spread, and farmer's share of retail price, annual 1966-68, quarterly 1968-69

Date	Retail price	Wholesale	Gross	Byproduct	Net	Farm-retail spread			Farmer's share
	per pound 1/	value 2/	farm value 3/	allowance 4/	farm value 5/	Total	Wholesale- retail	Farm- wholesale	
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Percent
Beef, Choice grade									
1966	84.3	58.9	55.5	5.9	49.6	34.7	25.4	9.3	59
1967	84.1	59.7	54.3	5.0	49.3	34.8	24.4	10.4	59
1968 6/.....	87.3	63.0	57.5	5.0	52.5	34.8	24.3	10.5	60
1968									
Jan.-Mar.	86.4	62.0	56.3	4.8	51.5	34.9	24.4	10.5	60
Apr.-June	86.6	62.9	57.8	5.3	52.5	34.1	23.7	10.4	61
July-Sept.	87.9	64.1	58.6	5.1	53.5	34.4	23.8	10.6	61
Oct.-Dec.	88.3	63.0	57.4	5.1	52.3	36.0	25.3	10.7	59
1969									
Jan.-Mar.	90.0	65.0	60.4	5.1	55.3	34.7	25.0	9.7	61
Apr.-June	95.8	72.8	68.2	5.8	62.4	33.4	23.0	10.4	65
July-Sept.									
Oct.-Dec.									
Pork									
1966	73.4	54.8	47.6	6.4	41.2	32.2	18.6	13.6	56
1967	67.0	48.1	39.0	4.7	34.3	32.7	18.9	13.8	51
1968 6/.....	67.0	48.4	38.4	4.3	34.1	32.9	18.6	14.3	51
1968									
Jan.-Mar.	66.1	47.0	36.7	4.3	32.4	33.7	19.1	14.6	49
Apr.-June	66.4	48.3	38.1	4.3	33.8	32.6	18.1	14.5	51
July-Sept.	68.0	50.6	42.0	4.3	37.7	30.3	17.4	12.9	55
Oct.-Dec.	67.5	47.8	36.6	4.0	32.6	34.9	19.7	15.2	48
1969									
Jan.-Mar.	67.7	49.5	39.1	4.4	34.7	33.0	18.2	14.8	51
Apr.-June	69.9	52.0	43.9	5.1	38.8	31.1	17.9	13.2	56
July-Sept.									
Oct.-Dec.									
Lamb, Choice grade									
1966	85.6	59.8	55.5	8.4	47.1	38.5	25.8	12.7	55
1967	87.3	60.7	52.2	5.7	46.5	40.8	26.6	14.2	53
1968 6/.....	93.6	65.9	57.5	6.1	51.4	42.2	27.7	14.5	55
1968									
Jan.-Mar.	91.2	62.4	54.9	6.3	48.6	42.6	28.8	13.8	53
Apr.-June	93.7	69.1	59.7	6.2	53.5	40.2	24.6	15.6	57
July-Sept.	94.6	65.4	57.7	6.3	51.4	43.2	29.2	14.0	54
Oct.-Dec.	95.0	66.7	57.8	5.9	51.9	43.1	28.3	14.8	55
1969									
Jan.-Mar.	96.7	69.2	61.8	7.9	53.9	42.8	27.5	15.3	56
Apr.-June	100.8	74.6	65.3	7.7	57.6	43.2	26.2	17.0	57
July-Sept.									
Oct.-Dec.									

1/ Estimated weighted average price of retail cuts. 2/ Wholesale value of quantity of carcass equivalent to 1 lb. of retail cuts: Beef, 1.35 lb.; pork, 1.00 lb.; lamb, 1.14 lb. 3/ Payment to farmer for quantity of live animal equivalent to 1 lb. of retail cuts: Beef, 2.25 lb.; pork 2.00 lb.; lamb, quantity varies by months from 2.33 lb. in April to 2.38 lb. in October. 4/ Portion of gross farm value attributed to edible and inedible byproduct. 5/ Gross farm value minus byproduct allowance. 6/ Revised.

CONSUMER INCOME AND EXPENDITURES

Personal disposable income amounted to \$3,070 per person 1/ in the second quarter of 1969--2 percent higher than in the preceding quarter and 5 percent above a year earlier (table 4). In constant dollars, however, the increase over the previous quarter and April-June 1968 was less than 1 percent.

Consumer expenditures for goods and services averaged \$2,812 per person 1/ in the second quarter this year, up about 1 percent from the previous quarter and about 7 percent from a year earlier.

Personal savings were at an annual rate of \$179 per capita in the second quarter. This was just less than 6 percent of disposable income compared with about 7 percent a year earlier.

Expenditures for Food

Consumer expenditures for food in the second quarter averaged \$503 per person 1/--about the same as in the first quarter, but up about 2 percent from the second quarter of 1968. 2/

In 1968, consumers spent \$494 per person for food--\$24 more than in 1967. They bought more food and paid higher prices for it. Per capita expenditures for food in 1968 were 29 percent greater than a decade earlier. Prices of foods (including restaurant meals) increased 17 percent

over the decade. Part of the rise in expenditures resulted from consumers substituting relatively expensive foods for cheaper foods and purchasing more marketing services with their food.

During the past decade, per capita disposable income increased more than expenditures per person for food. Thus, the percentage of income spent for food fell markedly from 20.9 percent in 1958 to 16.8 percent (revised) in 1968.

Other Expenditures

Consumer expenditures for goods and services other than food amounted to \$2,174 per person in 1968--up 69 percent from 1958 (table 4). Unlike spending for food, these expenditures increased more than disposable income, taking 74 percent of it in 1968 versus only 70 percent in 1958. Prices for these goods and services rose 22 percent and accounted for approximately a third of the rise in per capita expenditures.

Expenditures for clothing and shoes averaged \$230 per person in 1968, up 8 percent from 1967. These expenditures accounted for about 8 percent of disposable income in both years and also in 1958. Consumers spent about \$48 per person for tobacco in 1968--1.6 percent of disposable income. Expenditures for tobacco have taken around 2 percent of disposable income in most years since World War II.

1/ Seasonally adjusted annual rate.

2/ These expenditures include those for all foods consumed both at home and away.

Table 4.--Per capita income and expenditures for food and other goods and services, 1957-59 average, annual 1958-68 and quarterly 1968-69 1/

Year	Personal consumption expenditures				
	Disposable personal income	Food		Other goods and services	
		Percentage		Percentage	
		Actual	of disposable income <u>2/</u>	Actual	of disposable income <u>2/</u>
	Dollars	Dollars	Percent	Dollars	Percent
1957-59 Av.	1,846	380	20.6	1,309	70.9
1958	1,831	382	20.9	1,284	70.1
1959	1,905	386	20.3	1,372	72.0
1960	1,937	388	20.0	1,412	72.9
1961	1,983	392	19.8	1,432	72.2
1962	2,064	399	19.3	1,503	72.9
1963	2,136	404	18.9	1,576	73.8
1964	2,280	419	18.4	1,669	73.2
1965	2,432	441	18.1	1,784	73.3
1966 <u>3/</u>	2,600	467	18.0	1,901	73.1
1967 <u>3/</u>	2,745	470	17.1	2,002	73.0
1968 <u>3/</u>	2,933	494	16.8	2,174	74.1
Annual rates, seasonally adjusted					
<u>1968 3/</u>					
Jan.-Mar.	2,869	486	16.9	2,111	73.6
Apr.-June	2,924	494	16.9	2,146	73.4
July-Sept.	2,946	498	16.9	2,207	74.9
Oct.-Dec.	2,991	498	16.6	2,228	74.5
<u>1969 4/</u>					
Jan.-Mar.	3,016	506	16.8	2,270	75.3
Apr.-June	3,070	503	16.4	2,309	75.2

1/ Per capita income and expenditures for food, 1929-57, published in the February 1966 issue of the Marketing and Transportation Situation (MTS-160).

2/ Percentages calculated from total disposable income and expenditures.

3/ Revised. 4/ Preliminary.

Compiled from estimates published by the Office of Business Economics, National Income Division, Department of Commerce.

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X THE BILL FOR MARKETING FARM-FOOD PRODUCTS 1/

Civilian consumers spent \$89.5 billion on foods originating on U.S. farms in 1968, an increase of \$4.7 billion over 1967 (table 5). Farmers received \$28.9 billion for these products, up by \$1.6 billion after the decline in 1967. The bill for marketing these foods rose \$3.1 billion to \$60.6 billion. 2/

The major influence on the increase in consumer expenditures in 1968 was the rise in retail prices. Prices of U.S. farm-foods in retail stores rose sharply in 1968 after a slight decline in 1967. Prices of food in away-from-home eating establishments rose even more sharply. Together they averaged nearly 4 percent higher.

Farm prices of food products, which declined in 1967, were up by almost 5 percent in 1968. This rise accounted for approximately three-fourths of the increase in farm value.

In the past decade civilian expenditures rose every year mainly because of increases in the volume of products entering the marketing system and rising prices. The marketing bill also increased every year. In contrast, the farm value declined in 2 of these years because of reduced farm prices.

From 1958 to 1968, the average annual increase was 3.9 percent in consumer expenditures, 3.5 percent in farm value, and 4.1 percent in the marketing bill. Increases in 1968 were all over 5 percent, considerably above the average for the decade.

Growth in the volume of products marketed accounted for approximately a fourth of the increase in the marketing bill from 1967 to 1968. A much larger part

of the increase resulted from rises in cost of labor, packaging materials and other goods and services. Prices of intermediate goods and services (not including raw materials and labor) averaged 3 percent higher in 1968. Increases in services per unit of product also accounted for part of the rise in the marketing bill.

Since 1957-59, volume has increased 22 percent and has been responsible for almost half of the increase in the marketing bill. Approximately a third of the increase has resulted from rising costs and about a fifth from increases in marketing services per unit of product.

Changes for Product Groups

Consumer expenditures increased for all product groups in 1968 (table 6). Expenditures for most product groups rose between 5 and 6 percent over 1967. In contrast, the grain mill and miscellaneous products groups rose less than 2 percent, while expenditures on dairy products jumped 8 percent. An increase in the proportion of frozen desserts manufactured from domestic ingredients contributed to the rise in expenditures for dairy products. In 1966 and 1967, considerable quantities of butterfat-sugar mixtures were imported for use in the manufacture of these products. Following restrictions imposed in mid-1967, these imports were reduced.

Following declines in farm values of most product groups in 1967, farm values of 4 food groups rose in 1968 and 3 declined. Farm values of the animal product groups--meat, dairy, poultry and eggs--rose between 6 and 8 percent in 1968. Fruits and vegetables rose 9 percent. Decreases were: grain mill products,

1/ Prepared by Jeannette Findlay and Leland W. Southard, Agricultural Economists, Marketing Economics Division. 2/ The marketing bill is the difference between total expenditures by civilian consumers for domestic farm-food products and the farm value of gross returns that farmers received for the equivalent farm products. It is an estimate of total charges for transporting, processing, wholesaling, and retailing farm foods. Foods sold in the form of meals in restaurants and other eating places, and those sold at less than retail prices are valued at the point of sale. Estimates do not include the value of food products not produced on farms in the United States, food consumed on farms where produced, or foods not sold to civilian consumers in this country.

5 percent; bakery products, 3 percent, and miscellaneous products, 2 percent. These declines were largely caused by decreases in prices of wheat and soybeans.

The marketing bill for each of the product groups rose again in 1968. All rose by more than 2 percent. Meat and bakery products rose by 6 percent, and fruits and vegetable products by 5 percent. The dairy group rose the most, almost 10 percent.

Components of the Marketing Bill

Labor

Persons engaged in marketing farm foods to civilian consumers in the United States received a total compensation of \$27.3 billion in 1968 (table 7). The rise in labor costs in 1968 was almost 9 percent, compared with an average annual increase of about 5 percent during the last decade. Percentage increases in labor costs in 1968 were largest in retail food stores and eating places. Labor costs accounted for 45 percent of the marketing bill in 1968 compared with 44 percent in 1967 and 43 percent in 1958.

Labor costs include wages and salaries to production and clerical workers, supervisors, managers and officers; tips to employees in eating places, imputed earnings of proprietors, partners, and unpaid family workers; and employers' payment toward fringe benefits.

Labor costs per hour in marketing farm food products averaged 58 percent higher in 1968 than in 1957-59 (table 8). However, improvements in output per man-hour held the rise in labor costs per unit of product marketed to 27 percent.

Rail and Truck Transportation

Costs of shipping farm food products by rail and truck amounted to about 8 percent of the marketing bill in 1968, compared with 10 percent in 1957-1959. These costs do not include intra-city truck transportation or air and water transportation.

In general, railroad freight rate indexes for farm food products trended downward from 1957-59 to 1967, then turned up in 1968. The Interstate Commerce Commission granted the railroads a general freight rate increase of 3 percent in late 1967, and selective increases ranging from 3 to 10 percent in 1968.

Corporate Profits

Profits (before Federal taxes on income) that corporations derived from marketing farm-food products totaled \$3.6 billion in 1968--16 percent more than in 1967. Before-tax profits accounted for 5.9 percent of the marketing bill in 1968 and 5.4 percent in 1967.

After-tax profits amounted to 50 percent of the before-tax profits in 1968, compared with 52 percent in 1967. The 10-percent surtax on corporate income tax effective January 1, 1968, was mainly responsible for the decrease.

Miscellaneous

This component includes advertising, business taxes, depreciation, interest, rent, and repairs, contributions, and bad debts. Miscellaneous marketing costs have been increasing faster than the other components of the marketing bill. In 1968, these items amounted to \$9.8 billion, compared with \$9.2 billion in 1967--an increase of 6.5 percent. Depreciation, business taxes, and advertising are the most significant of these cost items, accounting for \$6.5 billion of the \$9.8 billion in 1968.

Total miscellaneous costs per dollar of sales vary considerably by type of marketing firm (table 9). These costs per dollar of sales range from a low of 2.3 cents for wholesalers to a high of 12.8 cents for eating places. Rent, business taxes, and depreciation are much larger for eating places than for other types of marketing firms.

Miscellaneous costs as a group have increased faster than sales for each type of marketing firm. Increases in business

taxes per dollar of sales are due partly to higher social security and property taxes. Rent has increased for processors, retail stores, and eating places, partly due to increased use of rental equipment and facilities.

Cost Changes Since 1959

Between 1959 and 1968, the marketing bill increased by \$18.4 billion or 44 percent (table 10). Labor costs, the largest component, increased by \$9.5 billion, about half the total rise.

Other Costs

Other costs, the residual component of the marketing bill, include many goods and services. The size of the residual is influenced in part by the methodology used in estimating both the marketing bill and the cost components. In 1968, containers, packaging, labeling may have accounted for \$7 billion of this component, and costs connected with institutional feeding, \$4 billion. Some other costs included in this component are utilities, fuel, insurance, and intracity for hire transportation.

About \$4.1 billion, or a fifth of the increase, resulted from rising depreciation, business taxes, advertising, rent, interest, repairs, and bad debts, and contributions. Depreciation, rent, and advertising expenses rose around 60 percent while business taxes almost doubled and interest increased 1½ times. Profits accounted for \$1.5 billion of the increase in the marketing bill from 1959 to 1968 and transportation \$0.6 billion. Transportation costs only increased 15 percent, the smallest increase of any component.

Table 5.--Marketing bill, farm value, and consumer expenditures for domestic farm-food products bought by civilians, 1947-68

Year	Total marketing bill	Farm value 1/	Civilian expendi- tures for farm foods 2/	Year	Total marketing bill	Farm value 1/	Civilian expendi- tures for farm foods 2/
Billion dollars				Billion dollars			
1947.....	22.6	19.3	41.9	1958....	39.5	21.5	61.0
1948.....	24.9	19.9	44.8	1959....	42.2	20.9	63.1
1949.....	26.0	17.4	43.4	1957-59:			
1947-49				av.....	39.9	20.9	60.8
av.....	24.5	18.9	43.4	1960....	44.2	21.7	65.9
1950.....	26.0	18.0	44.0	1961....	45.1	22.0	67.1
1951.....	28.7	20.5	49.2	1962....	46.9	22.4	69.3
1952.....	30.5	20.4	50.9	1963....	48.9	22.6	71.5
1953.....	31.5	19.5	51.0	1964....	51.2	23.4	74.6
1954.....	32.3	18.8	51.1	1965....	52.1	25.5	77.6
1955.....	34.4	18.7	53.1	1966....	54.7	28.1	82.8
1956.....	36.3	19.2	55.5	1967....	57.5	27.3	84.8
1957.....	37.9	20.4	58.3	1968 3/	60.6	28.9	89.5

1/ The farm value is the gross return to farmers for products equivalent to those sold to consumers. Values of inedible byproducts, nonfood products, and exports are not included.

2/ Consumer expenditures for domestic farm-food products; excluded are expenditures for imported foods, seafoods, and other foods of nonfarm origin.

3/ Preliminary. (Beginning with 1960, estimates are for 50 States.)

Table 6.--Total marketing bill, farm value, and consumer expenditures, by commodity group, for domestic farm-food products bought by civilians, 1947-68 1/

Year	All farm foods			Meat products			Dairy products			Poultry and eggs		
	Market-	Farm	Expend-	Market-	Farm	Expend-	Market-	Farm	Expend-	Market-	Farm	Expend-
	ing	value	itures	ing	value	itures	ing	value	itures	ing	value	itures
	bill			bill			bill			bill		
	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.	Mil.
	dol.	dol.	dol.	dol.	dol.	dol.	dol.	dol.	dol.	dol.	dol.	dol.
1947	22,643	19,294	41,937	5,341	7,464	12,805	4,083	3,869	7,952	1,251	2,721	3,972
1948	24,936	19,869	44,805	5,773	7,679	13,452	4,588	4,226	8,814	1,362	3,041	4,403
1949	25,985	17,386	43,371	5,911	6,680	12,591	4,435	3,613	8,048	1,452	2,799	4,251
1950	25,960	18,032	43,992	5,979	7,373	13,352	4,501	3,656	8,157	1,485	2,579	4,064
1951	28,740	20,512	49,252	6,406	8,083	14,489	5,161	4,174	9,335	1,743	3,258	5,001
1952	30,519	20,413	50,932	7,072	7,711	14,783	5,482	4,429	9,911	1,761	3,036	4,797
1953	31,553	19,460	51,013	7,373	7,197	14,570	5,649	4,061	9,710	1,754	3,202	4,956
1954	32,316	18,824	51,140	7,439	7,223	14,662	5,877	3,886	9,763	1,803	2,651	4,454
1955	34,378	18,749	53,127	8,152	6,647	14,799	6,224	4,077	10,301	1,755	2,825	4,580
1956	36,302	19,465	55,548	8,506	6,633	15,139	6,510	4,321	10,831	1,935	2,775	4,710
1957	37,888	20,405	58,293	8,829	7,546	16,375	6,767	4,435	11,202	1,976	2,710	4,686
1958	39,549	21,445	60,994	8,933	8,535	17,468	6,987	4,463	11,450	2,164	2,908	5,072
1959	42,202	20,916	63,118	9,945	8,029	17,974	7,308	4,541	11,849	2,197	2,555	4,752
1960	44,150	21,699	65,849	10,182	8,170	18,352	7,484	4,625	12,109	2,160	2,842	5,002
1961	45,101	22,043	67,144	10,271	8,321	18,592	7,602	4,648	12,250	2,385	2,668	5,053
1962	46,891	22,424	69,315	10,501	8,732	19,233	7,838	4,612	12,450	2,405	2,683	5,088
1963	48,945	22,574	71,519	11,380	8,467	19,847	7,959	4,667	12,626	2,488	2,753	5,241
1964	51,188	23,352	74,540	12,301	8,523	20,824	8,102	4,812	12,914	2,587	2,766	5,353
1965	52,095	25,544	77,639	11,867	9,941	21,808	8,113	4,861	12,974	2,716	2,934	5,650
1966	54,739	28,112	82,851	13,187	11,265	24,452	8,123	5,354	13,477	3,086	3,462	6,548
1967	57,483	27,328	84,811	14,003	11,143	25,146	8,120	5,399	13,519	3,221	2,939	6,160
1968 2/.....	60,550	28,917	89,467	14,810	11,833	26,643	8,901	5,755	14,656	3,298	3,168	6,466
	Fruits and vegetables:			Grain mill products:			Bakery products 3/:			Miscellaneous		
1947	4,952	2,646	7,598	1,014	841	1,855	3,194	876	4,070	2,808	877	3,685
1948	5,235	2,454	7,689	1,186	765	1,951	3,734	848	4,582	3,058	856	3,914
1949	5,690	2,335	8,025	1,244	622	1,866	4,070	728	4,798	3,183	609	3,792
1950	5,630	2,278	7,908	1,234	637	1,871	4,055	761	4,816	3,076	748	3,824
1951	6,440	2,649	9,089	1,336	666	2,002	4,397	859	5,256	3,257	823	4,080
1952	7,082	3,008	10,090	1,394	637	2,031	4,532	811	5,343	3,196	781	3,977
1953	7,336	2,737	10,073	1,433	590	2,023	4,596	834	5,430	3,412	839	4,251
1954	7,535	2,743	10,278	1,499	546	2,045	4,520	860	5,380	3,643	915	4,558
1955	8,274	2,844	11,118	1,577	561	2,138	4,661	819	5,480	3,735	976	4,711
1956	8,805	3,064	11,869	1,671	583	2,254	4,736	829	5,565	4,139	1,041	5,180
1957	9,198	3,211	12,409	1,820	615	2,435	5,276	837	6,113	4,022	1,051	5,073
1958	9,865	3,085	12,950	2,030	612	2,642	5,352	797	6,149	4,217	1,045	5,262
1959	10,240	3,355	13,595	2,069	590	2,659	5,843	772	6,615	4,600	1,074	5,674
1960	10,998	3,475	14,473	2,147	603	2,750	6,033	797	6,830	5,146	1,187	6,333
1961	11,164	3,557	14,721	2,210	615	2,825	6,168	861	7,029	5,301	1,373	6,674
1962	11,837	3,554	15,391	2,261	666	2,927	6,471	890	7,361	5,578	1,287	6,865
1963	12,035	3,635	15,670	2,381	665	3,046	6,783	925	7,708	5,919	1,462	7,381
1964	12,390	4,090	16,480	2,513	690	3,203	6,989	947	7,936	6,306	1,524	7,830
1965	12,671	4,394	17,065	2,682	743	3,425	7,094	1,007	8,101	6,952	1,664	8,616
1966	13,434	4,318	17,752	2,581	756	3,337	7,068	1,094	8,162	7,260	1,863	9,123
1967	14,029	4,316	18,345	2,769	747	3,516	7,611	1,054	8,665	7,730	1,730	9,460
1968 2/.....	14,716	4,719	19,435	2,851	712	3,563	8,058	1,027	9,085	7,916	1,703	9,619

1/ Expenditures represent the market value to consumers of all domestic farm foods bought by civilian consumers in this country. Farm value is adjusted to eliminate imputed value of nonfood byproducts. The marketing bill is the difference between the farm value and expenditures.

2/ Preliminary estimates.

3/ Farm value of bakery products group includes farm values of flour, milk, eggs, fruit, lard, vegetable shortening, and sugar used in bakery products. Farm values of these ingredients are not included in farm values of other product groups.

Beginning with 1960, estimates are for 50 States.

Table 7.--Cost components of the marketing bill for farm-foods, 1957-68 1/

Year	: Labor <u>2/</u>	: Rail and : truck trans- : portation <u>3/</u>	: <u>Corporate profits</u> : Before taxes : After taxes	: Depreciation:	: Business : taxes <u>4/</u>
</					

1/ For domestic farm foods bought by U.S. civilian consumers. 2/ Includes supplements to wages and salaries such as social security and unemployment insurance taxes and health insurance premiums; also includes imputed earnings of proprietors, partners, and family workers not receiving stated remuneration. 3/ Includes charges for heating and refrigeration; does not include local hauling; estimates for 1960-67 have been revised. 4/ Includes property, social security, unemployment insurance, State income, and franchise taxes, license fees, etc., but does not include Federal income tax. Social security and unemployment insurance taxes also are included in the labor cost component. 5/ Residual component; includes other costs approximately distributed as follows in 1968: Containers, packaging, and labeling, \$7 bil; cost incurred in establishments like schools, colleges, hospitals, recreation centers and airlines, \$4 bil; other costs include utilities, fuel, promotion, local for-hire transportation, water transportation, insurance, etc. 6/ Preliminary. (Beginning with 1960, estimates are for 50 States. Data for 1947-56 are published in MTS-170, August 1968).

Table 8.--Average hourly labor cost, unit labor cost and profits per unit of product for marketing farm-food products, 1947-68 1/

(1957-59=100)				
Year	Hourly labor cost <u>2/</u>	Unit labor cost <u>3/</u>	Profit per unit of product <u>4/</u>	
			Before taxes	After taxes
1947.....	58	74	96	128
1948.....	63	84	82	103
1949.....	67	86	80	100
1950.....	69	86	99	115
1951.....	74	92	83	80
1952.....	77	94	82	75
1953.....	82	96	87	83
1954.....	87	97	81	79
1955.....	89	96	97	99
1956.....	92	96	98	99
1957.....	97	98	97	95
1958.....	100	101	98	99
1959.....	103	101	105	106
1960.....	108	102	98	95
1961.....	114	101	101	101
1962.....	120	104	101	99
1963.....	125	104	109	105
1964.....	128	104	121	128
1965.....	133	110	129	144
1966.....	140	114	144	158
1967.....	147	119	---	---
1968 <u>5/</u>	158	127	---	---

1/ For domestic farm-originated foods bought by civilian consumers in this country.

2/ Hourly labor cost derived by dividing total labor cost (table 7) by total man-hours worked.

3/ Unit labor cost is the quotient of the indexes of total labor cost (table 7) and of volume of farm-food products marketed to civilian consumers. The index of farm-food products marketed was constructed by weighting the quantities sold by 1957-59 average retail prices.

4/ Profit per unit of product is the quotient of the index of total corporate profits from marketing farm foods produced and consumed in the United States (table 7) and the index of the volume of farm-food products marketed.

5/ Preliminary.

Table 9.--Miscellaneous cost per dollar of sales, by type of food marketing firm, 1959 and 1966

Item	Processors		Wholesalers		Retailers		Eating places	
	1959	1966	1959	1966	1959	1966	1959	1966
	-----Cents-----							
Depreciation.....	1.51	1.61	0.55	0.53	1.02	1.02	2.74	2.77
Business taxes.....	1.13	1.42	.48	.59	.84	1.12	2.44	3.34
Advertising.....	1.86	1.91	.35	.26	.72	1.13	.64	.81
Rent.....	.37	.44	.38	.36	1.18	1.28	3.76	4.05
Interest.....	.24	.35	.14	.19	.14	.15	.45	.64
Repairs, bad debts, and contributions...	.94	.95	.27	.35	.38	.40	1.08	1.21
Total.....	6.05	6.68	2.17	2.28	4.28	5.10	11.11	12.82

Compiled from Internal Revenue Service data.

Table 10.--Increase in cost components of the marketing bill, 1959 to 1968

Cost component	Amount				Increase in marketing bill due to increase in components
	1959	1968	Increase 1959 to 1968		
	<u>Bil. dol.</u>	<u>Bil. dol.</u>	<u>Bil. dol.</u>	<u>Pct.</u>		Pct.
Labor.....	17.8	27.3	9.5	53.4	51.6
Transportation.....	4.0	4.6	.6	15.0	3.3
Profit (before taxes).....	2.1	3.6	1.5	71.4	8.2
Depreciation.....	1.4	2.2	.8	57.1	4.3
Business taxes.....	1.2	2.3	1.1	91.7	6.0
Advertising.....	1.2	2.0	.8	66.7	4.3
Rent (net).....	1.1	1.7	.6	54.5	3.3
Interest (net).....	.2	.5	.3	150.0	1.6
Repairs, bad debts, contributions.....	.7	1.2	.5	71.4	2.7
Other (residual).....	12.5	15.2	2.7	21.6	14.7
Total.....	42.2	60.6	18.4	43.6	100.0

IMPLICATIONS OF CHANGE IN THE TOBACCO ECONOMY

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Demand for tobacco and tobacco products is an important consideration for the U.S. economy. Domestic expenditures on tobacco products totaled approximately \$9.9 billion in 1968. Of this, \$4.4 billion went to Federal, State, and local taxes. Tobacco taxes account for about 1.5 percent of Federal tax and nontax revenues and about 2 percent of revenues for State and localities. Farm receipts for the 1968 crop approximated \$1.2 billion. The net export value of U.S. tobacco and tobacco products (exports minus imports) in 1968 was about \$532 million.

The domestic marketing bill for tobacco products, including processing, manufacturing, wholesaling, retailing, and transportation, was approximately \$4.4 billion in 1968.

A number of events, occurring recently or in the process of occurring, will likely have considerable impact on the demand for tobacco and tobacco products, with resulting implications for other sectors of the economy. This article discusses a few of the more important factors affecting the demand for tobacco and its manufactured products, and their economic implications. These factors are considered in two categories--those affecting final demand for manufactured tobacco products, and those affecting demand for leaf tobacco.

Factors Affecting Final Demand

Cigarettes are by far the largest domestic outlet for tobacco, accounting for about four-fifths of the tobacco consumed in the United States. Consequently, the discussion of final demand factors for tobacco products will relate primarily to cigarettes.

Price Elasticity

Cigarettes have traditionally been thought to have an extremely inelastic

demand function. This would mean that a major change in the price of the product generates only a much smaller change in the quantity of the product consumed. Thus, for cigarettes, a substantial price increase is assumed to have only a minor impact on the quantity of cigarettes consumed. This assumption of price inelasticity has been the economic justification for taxation of cigarettes, and to a lesser extent other tobacco products, by State and local taxing authorities. Cigarette taxes have been a mainstay of the revenue systems of most States for several decades, and a growing number of local jurisdictions are imposing taxes on cigarettes as a means of bolstering their incomes.

The price elasticity of demand for cigarettes was estimated to be $-.511$ in a recent study ^{1/} covering the period 1950-65. This implies that a 1 percent increase in the price of cigarettes will cause approximately a 0.5 percent decrease in per capita consumption. No attempt was made in the study, however, to determine what influence the cigarette price level had on the price elasticity.

In an effort to determine if the price elasticity for cigarettes was influenced by the price level, the data in the above study were stratified into 3 price ranges ^{2/} and the price elasticity computed separately for each stratum. This procedure yielded price elasticity estimates of $-.377$ for the low range, $-.546$ for the medium range, and $-.644$ for the high range. Thus, in the low price range, a price increase of 1 percent will yield a 0.377 percent decrease in per capita sales. In the high price range a 1 percent price increase will cause per capita sales to fall by 0.644 percent. For State and local taxing authorities this means that additional revenue that can be raised by increasing

^{1/} Herbert L. Lyon and Julian L. Simon--Price Elasticity of the Demand for Cigarettes in the United States. American Journal of Agricultural Economics, Vol. 50, No. 4, Nov. 1968. pp. 888-895

^{2/} Low prices were 23 cents or less per pack, medium prices were 23.1 to 26 cents per pack, and high prices were 26.1 cents per pack and above.

cigarette taxes will decrease as the cigarette price level increases. Further, a limit is implied on the revenue that can be raised from taxing tobacco products.

Demand Shifters

Various factors other than price influence the demand for tobacco products. Tobacco companies advertise their products, for example, in an attempt to increase the level of demand. Most efforts to influence the level of demand for a product are attempts to increase it, and are made by those marketing the product.

And of course, efforts are also made in the other direction--to discourage a product's consumption, or to decrease the level of demand. Since the Surgeon General's report on smoking and health appeared in 1964, various public and private agencies have sought increasingly to cause such a shift in the demand for cigarettes through both media advertising and educational programs.

Any predictions as to long-range effects of these efforts, or precise estimates of their impact on cigarette consumption, would be premature. It seems apparent, however, that these attempts to reduce the demand for cigarettes are having some success. They likely accounted for at least part of the 2 percent decline in per capita cigarette consumption in 1968. Furthermore, efforts to decrease the demand level for cigarettes are expected to intensify.

Quantification of the net effect of these demand factors on the consumption of tobacco products is difficult. However, recent projections of cigarette demand for 1975 ^{3/} indicate virtually no change in total domestic cigarette consumption from 1968. The incidence of cigarette smokers is projected to decline from 46.3 percent of the adult population to 40.9 percent. But population growth is expected to offset the decline in percentage of smokers.

If total domestic consumption indeed holds stable over the next several years, cigarette taxes will quite likely provide a decreasing portion of State and local government revenue. With both an increase in the price elasticity of cigarettes as prices go up and the possible decline in the level of per capita demand, taxing authorities will find it more difficult to raise additional revenue from tobacco products. Tobacco farmers, manufacturers of tobacco products, and the wholesale-retail tobacco trade will also feel the economic effects of the changes in the final demand for tobacco products.

Factors Affecting Farm Demand

Demand for tobacco at the farm level is dependent not only on the final demand for tobacco products, but also on the quantity of leaf tobacco required for their manufacture and for export.

If the tobacco required to produce a thousand cigarettes remained constant, a change in cigarette consumption would obviously generate a proportional change in the quantity of leaf tobacco required. Leaf tobacco used per thousand cigarettes, however, has not remained constant. Since the mid-1950's the quantity of tobacco used per thousand cigarettes has declined about 28 percent. Only an increase in cigarette production of nearly 20 percent between 1958/59 and 1967/68 kept the quantity of tobacco utilized in cigarette manufacture at the 1958/59 level.

With cigarette consumption projected to be constant, any further decrease--and some is likely--in the quantity of tobacco required per thousand cigarettes would obviously result in a decrease in demand for tobacco at the farm level. Such a shift could have rather serious economic implications for the major tobacco producing belts in the

^{3/} Arthur G. Conover--Longer-Range Prospects for Domestic Consumption of Cigarette Tobacco. Speech at the 46th National Agricultural Outlook Conference, USDA, February 1969.

Southeast in terms of labor displacement, declining land values, and decreased farm income.

Several factors have reduced domestic tobacco use per thousand cigarettes produced. Important among these are the increased use of imported oriental tobacco; the shift to filter tip cigarettes; reduction in the circumference of cigarettes; lengthened filters, increase use of homogenized tobacco sheet (a paper-like sheet made from tobacco stems, scrap, and other tobacco materials); and other manufacturing efficiencies. An estimated 94 percent of the tobacco leaf is utilized in cigarettes under current manufacturing procedures, compared with 77 percent 15 years ago.

The above factors could further reduce the tobacco required per thousand cigarettes. If the trend to filter tips remains unchanged, they will account for 88 percent of the market in 1975, compared with 73 percent in 1967/68. Furthermore, an increase in the average length of filters is expected. In 1968 several brands of "thin" cigarettes, those with reduced circumferences, were introduced. Attainment of a significant market share by this type of cigarette would reduce tobacco requirements. In addition, the use of low-nicotine oriental tobacco in cigarettes may very likely increase. Introduction of the longer, 100-millimeter cigarettes, however, partially offsets factors tending to decrease tobacco requirements per thousand cigarettes.

Recent experimental developments hold the potential of reducing even further the tobacco required per thousand cigarettes produced. A method of freeze-drying flue-cured tobacco has been developed by the North Carolina Agricultural Experiment Station. Experiments indicate that freeze-dried tobacco has about twice the filling capacity of tobacco processed in the traditional manner. Consequently, this development could halve the amount of flue-cured tobacco required per thousand cigarettes--assuming of course, that the entire

flue-cured requirement would be met by the freeze-dried tobacco, and that no more than half the tobacco could be displaced. Displacement of a smaller proportion of the flue-cured requirement in cigarettes would be more likely.

A commercial adoption of the freeze-drying process depends on a number of factors. Chief among these are consumer acceptance of cigarettes containing freeze-dried tobacco, the costs of the freeze-drying process relative to the costs of conventional processing, and the extent to which the new process affects the tar and nicotine content of cigarettes.

The export market is a possible plus factor in the demand picture for tobacco. Cigarette consumption is rising in most foreign countries. Furthermore, there is a trend favoring American-type cigarettes in foreign countries. To capitalize on these developments in the face of increasing competition from foreign producers, however, the U.S. industry would have to improve its competitive position.

Tobacco is one of the most labor intensive crops produced in the United States. More man-hours of farm labor were required in 1967 to produce the flue-cured tobacco crop (295 million) than were required to produce either the crop of cotton (242 million) or food grains (206 million). Furthermore, tobacco production is fairly concentrated, so that in the major production areas it is a mainstay of the economy.

Any substantial decrease in demand for tobacco at the farm level, together with impending mechanization of tobacco production and handling, would portend significant adjustment problems for the major tobacco producing belts over the next decade. Serious problems of labor displacement and resource adjustment would be inevitable barring government intervention.

DEHYDRATED FOODS--A MARKET PERSPECTIVE 1/

Output of dehydrated foods doubled from 1955 to 1965, attaining a level of 3.26 billion pounds. 2/ Milk products, mainly nonfat dry milk, constituted 80 percent of the output. Potato products ranked second (table 11). Since 1965, output of dehydrated milk and potatoes has slackened. Growth in volume of other dehydrated foods has not been enough to offset this slack, resulting in a slight decline in estimated total output.

The current market status of food dehydration was part of a recent study to identify: (1) Levels of production, (2) competitive relationships between dehydrated foods and other forms, (3) market outlets, and (4) raw materials and processing costs for dehydrated foods. This article summarizes these findings and presents a perspective of dehydration as a part of the food processing and marketing industry.

Industry Development

Drying with manmade energy sources, often called dehydration, became important when natural-drying and other food preservation methods failed to meet war needs. Long-supply lines--and lack of refrigeration, storage, and transportation for bulky, highly perishable foods during World War II--created big outlets for dried milk, fruits, eggs, and vegetables. As a result of the new technology developed during the war emergency, more foods became preserved by drying, and the dehydrator segment of the food processing industry became more important.

Artificial drying has attained its greatest impact among commodities wherein alternative processing-preservation methods were not already widely applied. Thus, dehydrated milk, potatoes, onions, and

Table 11.--Production of dehydrated foods, firms surveyed and industry estimates, 1965-67

Product	: Dehydra- : : tion : : firms re- : : porting : : in : : survey :	1965 volume			Industry volume		
		: Report- : : ing : : firms :	: tion of : : the to- : : tal in- :		: 1965 : : 1966 : : 1967 :		
	: Number	Mil. lb.	Pct.	Mil. lb.	Mil. lb.	Mil. lb.	
Dairy products	156	1,662.5	65	2,574.0	2,225	2,338	
Meat and poultry	6	1.7	28	6.0	--	--	
Egg products	14	46.3	92	50.1	51.1	70.7	
Potatoes, onion and garlic :	18	245.5	61	402.9	<u>2/351.3</u>	<u>2/338.4</u>	
Other vegetables	18	26.7	89	30.0	--	--	
Fruits, berries, and melons:	8	16.8	76	22.0	--	--	
Miscellaneous	8	72.7	97	75.0	--	--	
Total	<u>1/213</u>	2,072.2	64	3,260.0	--	--	

1/ Includes duplications because of firms that dehydrate two or more products.

2/ Potatoes only.

Source: Tabulated from mail questionnaires, interviews and selected statistics published by U.S. Department of Agriculture.

1/ Prepared by the Market Development and Performance Branch, Marketing Economics Division based on information supplied by Battelle Memorial Institute, under contract with ERS, USDA.

2/ Excludes the following commodity groups often marketed in dehydrated forms: Imported products (mainly coffee and tea), cereals, nuts, seeds, sundried fruits, cured meats, and various food additives, essences, spices, and extracts.

garlic have attained the largest market share recognitions in comparison with other product forms (table 12).

Dehydrators process more than 70 commodities in 9 perishable-commodity groupings. Moisture content is a critical standard of quality of dehydrated foods. Industry and government buying tolerances for moisture contents range from 1.1 percent for freeze-dried applesauce up to 9.0 percent for instant rice. Low moisture levels, attainable with artificial drying, achieve long shelf life as well as compatibility as ingredients in dry foods.

Dehydration results in lowered transportation and storage costs. These savings often make the dehydrated product the economic choice, particularly when the location of production is a great distance from the market. For example, apples produced and dehydrated in the Northwest and marketed in the East ranged in price from 80 to 94 cents per pound (with 2 or 3 percent moisture). Alternative fresh or canned apples would need to be priced at less than 13 cents per pound to be equal in cost per unit of solids. 3/

Table 12.--Dehydrated products: Raw material equivalents and relationship to total domestic use, 1965

Product	: :Dehydrated: :production:	: :Conversion: :factor <u>1/</u> :	: :Raw material: :equivalent:	: :Total domestic: :food use	: :Dehydrated pro- :duction as a :proportion of :total food use
	: : <u>Mil. lb.</u>		: : <u>Mil. lb.</u>	: : <u>Mil. lb.</u>	: : <u>Pct.</u>
Dairy products.....	2,574.0	11.0	28,314	<u>2/</u> 8,260	<u>2/</u> 31.2
Meat and poultry.....	6.0	3.0	18	<u>3/</u> 42,025	<u>4/</u>
Eggs.....	50.1	3.8	190	<u>5/</u> 7,871	2.4
Potatoes.....	355.5	7.2	2,560	<u>6/</u> 21,950	16.2
Onions and garlic...	47.4	6.5	308	<u>7/</u> 2,480	12.4
Other vegetables.....	30.0	13.0	390	<u>8/</u> 31,359	1.2
Fruits, berries and					
melons.....	22.0	9.7	213	<u>9/</u> 29,186	0.7
Miscellaneous.....	75.0	10.0	750	--	--

1/ Multiple to convert dehydrated weight to raw material equivalent weight. The products chosen to represent the 8 commodity groups were, (1) skim milk, (2) cooked beef, (3) whole fresh eggs, (4) fresh Idaho potatoes, (5) fresh onions and garlic (average), (6) fresh peas, green peppers, and carrots, (7) fresh strawberries, apples and peaches and (8) "miscellaneous" is the average of conversion factors for fruits and vegetables and potatoes. (From Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products, Stat. Bul. No. 362, ERS-USDA)

2/ Milk solids-not-fat in all dairy products. (Total civilian use plus military and domestic donations). Dehydrated production is 31.2 percent of this total not-fat-solids consumption.

3/ Carcass weights of red meats, and poultry.

4/ Less than one-tenth of one percent.

5/ 5,014 million dozen eggs at 1.57 pounds per dozen.

6/ Fresh equivalent.

7/ Commercial production, less shrinkage and loss.

8/ Market weights of fresh and processed products, excluding potatoes.

9/ Market weights of fresh and processed products, including juices.

3/ Average wholesale prices for apples in New York in 1966 were: Fresh Northwest apples, 14.9 cents a pound; canned applesauce, 14.1 to 16.0 cents a pound. In contrast, Washington State air-dried apple slices were 38.2 cents a pound.

However, factors other than solids content are relevant. Taste, flavor, odor, appearance, structure and yield (rehydration ratio) also are important in ingredient selection. Until dehydrated products satisfy more of these criteria, they will be most frequently used when low moisture content is an essential property of the final product.

Most research by dehydrators and equipment suppliers is devoted to refinements in processing and product quality improvement. The unique processing methods and equipment requirements for dehydrating most commodities prevent easy transfer of benefits from successful development for one dehydrated product to another. So far, it has not been economically or technically feasible to produce dissimilar dehydrated products from one facility, as often can be done with canning or freezing. In addition, market acceptance of one dehydrated product has not increased demand for other commodities in dehydrated form, although success for one sparks product development efforts for others. Because of each commodity's uniqueness in processing and marketing, future expansion will depend more on discovery and exploitation of individual dehydrated commodities, rather than on a gradual growth in use of the technology among other products to the same levels attained by the current leaders.

Dehydration Technology

The study of dehydrated food processing and marketing indicated that the basic technology of dehydration is not expected to change radically. The three basic methods for removal of water by thermomechanical systems are: (a) Conduction or radiation (contact or exposure of food material to a heated surface or radiant source), (b) convection (exposure of food to a heated, moisture absorbing, air draft), and (c) vacuum-plus-heat (lower pressures increase vaporization rates of water).

Freeze-drying is the most exotic and expensive vacuum-plus-heat method. It

produces low temperature and pressure conditions sufficient to sublimate water vapor from ice in the food product and to condense and freeze it on another surface within the vacuum chamber. The principal advantages of this method are the minimum losses of volatile flavor components, and rapid rehydration of the dehydrated product.

There are many equipment design and operation variables applicable to all three methods that affect drying costs, and quality of products obtained. Loesecke ^{4/} identified (1) design of equipment, (2) air flow rate, (3) temperature, (4) ratio of recirculated air, (5) rate of product throughput, (6) structure of product, and (7) percentage and characteristics of bound water in the product as critical cost-affecting variables. Consumption of energy due to these variables can range from 1,500 to 5,000 Btu's per pound of water removed.

Costs of drying are lowest when the product (1) does not have a cellular structure, (2) is heat stable, (3) its water is not strongly bound up with the solids, and (4) becomes "dry" at a relatively high moisture level. Instant nonfat dry milk with 4 percent moisture and potato flakes or granules with 7 percent moisture are examples that are near the optimum in these characteristics.

As dehydration activity shifts toward more expensive and difficult-to-dry products, costs per unit of dried product increase (table 3). Evaluation of the technological progress attained so far for dehydrated foods indicates that unit costs have not attained an equilibrium level, but will be higher per unit of dehydrated product as expansion of activity is sought among more meat, poultry, fruit, and vegetable products.

Dehydration also is used on already-processed forms of foods. Frozen, or air-dried fruits and vegetables, cooked meats, cheeses, or canned foods are

^{4/} Loesecke, H.W. Drying and Dehydration of Foods, Reinhold Pub. Co., New York, 1955. 300 pp.

Table 13--Cost of dehydrating selected foods by type of equipment and size of plant 1/

Product	Dehydration equipment	Plant size			
		Small		Large	
		Output per day	Drying cost per pound	Output per day	Drying cost per pound
		Pounds	Cents	Pounds	Cents
Nonfat milk.....	Spray dryer	48,000	1.00	96,000	0.81
Potato flakes.....	Drum dryer	18,000	2.61	72,000	2.09
Sweet potato flakes....	Double drum dryer	15,600	2.53	46,800	2.06
Potato dices.....	2-stage continuous	17,330	2.10	69,310	1.82
	: belt dryer	:	:	:	:
Onions.....	5-stage continuous	24,000	3.04	144,000	2.54
	: belt dryer	:	:	:	:
Bell peppers.....	5-stage continuous	16,840	4.27	50,520	3.94
	: belt dryer	:	:	:	:
Tomato flakes.....	Foam-mat dryer	7,400	7.99	14,000	7.10
Fruit powder.....	Foam-mat dryer	9,250	6.39	17,500	5.68
Fruit crystals.....	Vacuum belt dryer	6,600	14.66	11,000	12.59
Cooked chicken.....	Freeze-dryer	6,800	9.4	27,200	6.3
Cooked beef.....	Freeze-dryer	5,800	10.8	23,200	7.2
Cooked shrimp.....	Freeze-dryer	3,700	17.1	14,800	10.3
Mushrooms.....	Freeze-dryer	1,100	48.4	4,400	31.3

1/ Based on a 3-shift day and 250 days of operation per year. Costs are estimated for drying operations only. Costs of raw materials and their preparation prior to drying, as well as costs of packaging, storage and other marketing operations for the dried products were not included in the model plant cost estimates.

Source: Kermit Bird, Freeze-Drying of Foods: Cost Projections, MRR-639, ERS, USDA, 1964.

frequently dehydrated for use in dry soups, entrees, desserts, or other food products.

Dehydrated Food Markets

Dehydrators sell their products into three major markets. In order of volume, they are (1) remanufacturers, (2) the government, and (3) consumers directly. Since about half the total movement to market goes through remanufacturers, acceptability of dehydrated foods in remanufacturing is the dominant marketing factor. When the remanufactured food is in a dry form, dry ingredients are essential. If the dry ingredient must be rehydrated before use, its desirability decreases.

Appraisal of market potentials for profitable application of dehydration technology to different commodities reveals

greatly different factors of determination. For example, fruit dehydration opportunities cannot be equated to milk and potato experiences. Dehydration filled a well-recognized need for an alternative market form of milk and potatoes. Burden-some surpluses and distressed farm prices caused industrywide interest and support for development of dehydrated products from milk and potatoes. In contrast, fruit processing and marketing alternatives already available include drying, canning, preserving, freezing, and cold storage. These provide producers with alternative markets and consumers with diverse and highly acceptable forms of fruit for year-round use. The one exception may be dry foods or mixes that include fruit.

Red meats, poultry, potatoes, and other vegetables have to be made into slices, dices, or purees and partly or fully cooked before dehydration. This pre-drying treatment limits their menu applications to items such as soups, purees, casseroles, and stews. Thus, market potentials for the dehydrated products are clearly associated with the frequency of use and preferences of consumers for these dishes.

Dairy Products: Dairy products are a major volume dehydrated commodity group with nonfat dry milk as the most important item. Dehydration reduces weight and transportation costs, and greatly extends shelf life of nonfat milk solids. Surpluses of skimmed milk convert to stable, low-mass products acceptable in domestic and foreign outlets. Rehydration is simple and afterwards the product can be used interchangeably with fresh skim milk products. The production of major dehydrated dairy products is shown in table 14.

The market survey of dehydrated milk products revealed (1) the dehydrated form must be available to the user at prices below alternative fresh forms, (2) that convenience-in-use includes lower weight, easier storage, and other cost- or effort-saving advantages to the user, but that these conveniences do not outweigh the importance of lower prices, and (3) nonfat dry milk is most often chosen by food manufacturers for its binding, flavor carrier, bodying, and lowest nutrient cost characteristics when used as a dry product ingredient. In beverages, bakery, and other semiliquid ingredient or product uses, fresh skimmed, evaporated, or condensed milk are often preferred substitutes for the dry form. Dried whey and lactose often are used as ingredients of foods instead of nonfat dry milk.

Meat and Poultry: Meat and poultry products are marketed with a wide range of moisture contents. Pork products have moisture levels ranging from 69.3 percent

Table 14.--Production of dehydrated dairy products, 1955-67

Year	:Nonfat milk	:Whole milk	:Buttermilk	:Whey	:Cream	:Total
	:	:	:	:	:	:
	: - - - - - Million pounds - - - - -					:
1955.....	1,410	108	58	196	0.8	1,773
1956.....	1,490	110	64	212	.8	1,877
1957.....	1,624	103	70	232	.5	2,030
1958.....	1,710	88	77	233	.6	2,109
1959.....	1,723	90	81	247	--	2,141
1960.....	1,818	98	86	277	--	2,279
1961.....	2,020	82	89	271	.2	2,462
1962.....	2,285	86	86	285	.7	2,743
1963.....	2,097	91	88	317	1.0	2,594
1964.....	2,177	88	92	362	.6	2,720
1965.....	1,993	89	87	404	1.0	2,574
1966.....	1,579	94	81	471	--	2,225
1967 <u>1/</u>	1,675	74	72	497	--	2,318

1/ Preliminary.

Source: Agricultural Statistics, USDA, 1960 and 1966; 1966 Census of Dry Milk Distribution Trends, The American Dry Milk Institute, 1967; and Dairy Situation, ERS, USDA.

for fresh to 8 percent for dry salt-cured products. ^{5/} Freeze-drying, which starts with already cooked pork, reduces moisture from as high as 56 percent to below 3 percent.

Retail markets for dehydrated meats include camper supplies and as minor ingredients in dried convenience foods (dry soup mixes, casseroles, and other traditional meat-flavored dishes). Manufacturers of dried foods say they can obtain the flavor and aroma of meat by using spices and synthetic flavorings, but actual pieces of meat enhance appearance and are essential to "put meat on the label." An estimated 64 percent of the 5 to 6 million pounds of dehydrated meats made in 1965 went into retail sales. Exports took 16 percent, institutional users 14 1/2 percent, while government, remanufacturers, and military purchases combined took the remaining 5 1/2 percent.

Because various low-cost processing methods yield a wide variety of red meat and poultry products with low moisture content and long shelf-life at competitive prices to fresh meats, freeze-dried meats at high prices are unlikely to attract other than highly specialized uses.

Eggs: Almost all dehydrated eggs are spray-dried. About 75 percent of dried eggs are used in food manufacturing. Government purchases, including military, took 7.5 percent of 1965 production, exports 5.4 percent, and retail about 4.4 percent. The remaining 8 percent went to miscellaneous or unknown uses.

Dried eggs compete in many uses with frozen liquid egg or shell eggs. Table shows U.S. production and market volume relationships between dried eggs and fresh and frozen liquid egg.

Higher cost for dried eggs, in comparison with frozen liquid egg, is the principal reason found for slow growth in dried egg use (table 15). Remanufacturers generally contrast the performance of dried eggs with

frozen liquid egg. However, because dried egg solids cost food manufacturers substantially more than liquid frozen or shell eggs, dried egg solids are used most in products that specifically require dry ingredients (table 16). Dry mixes sold for baking, puddings, desserts, and other egg-containing convenience-foods are growth areas and the primary determinant of market growth for dried eggs.

Potatoes: Dehydrated potatoes have attained a substantial share of total potato sales. Dehydrators have bought around 2 billion pounds of fresh potatoes annually since 1964. Fresh potatoes sold for dehydration have accounted for 15 to 20 percent of total potatoes used in processed products. Frozen, canned, and fried potato products and starch and flour compete with dehydration for the fresh potatoes utilized in processed potato products.

The dehydrator normally uses potatoes unsuited for fresh marketing, because of defects, misshapes, and undersizes. Peel and trim losses range from 5 to 48 percent, depending on quality of potatoes used. Average loss is about 25 percent. Shrinkage, which depends on the solids percentage in the fresh potato, differs by variety, storage, weather and cultural practices of producers. In 1966, surveyed potato flake makers were operating at only three-fourths of capacity, due mostly to supply conditions.

Dehydrated mashed potatoes, as flakes or granules, are about 90 percent of the dehydrated potato product consumption. Dice, slices, and pieces are the remaining 10 percent. Dehydrators estimated that about 70 percent of the granule and flake output goes to food service outlets and retail food stores. They compete with fresh potatoes served in mashed forms as well as in soups, gravies, or casseroles where a mashed potato ingredient is desired. Other important market outlets are as ingredients in prepared foods such as dry soup mixtures, bakery doughs, and frozen entrees. Government purchases for donation

^{5/} Composition of Foods. Agr. Handb. 8, (Rev.) ARS, USDA, 1963.

Table 15.--Liquid egg production and disposition, and market shares of dried eggs, 1958-67

Year	Liquid egg production	Disposition				Market shares	
		Fresh	Frozen	Frozen eggs later dried <u>1/</u>	Dried	Dried share of total pro- duction	Dried share of frozen and dried
			<u>-1,000 pounds-</u>			<u>Percent</u>	<u>Percent</u>
1958.....	480,798	31,334	350,886	15,815	98,578	20.50	21.93
1959.....	701,320	51,163	435,722	10,357	214,435	30.57	32.98
1960.....	582,466	44,025	362,366	8,123	176,075	30.22	32.70
1961.....	637,270	50,276	370,918	2,989	216,076	33.90	36.81
1962.....	634,764	55,473	381,683	4,885	197,608	31.13	34.11
1963.....	587,018	57,849	362,791	6,710	166,378	28.34	31.44
1964.....	658,961	68,105	381,606	2,924	209,250	31.75	35.41
1965.....	628,792	44,384	368,309	--	216,099	34.36	36.97
1966.....	621,392	40,310	356,440	--	224,642	36.15	28.65
1967.....	801,691	59,493	434,864	--	307,334	38.33	41.40

1/ Included in preceding column showing frozen in terms of liquid, beginning 1965, not available. Source: Statistical Reporting Service, USDA.

Table 16.--Cost comparison of dehydrated eggs versus other forms in major uses

Dehydrated eggs	Use or end product	Substitutes for dried eggs	Purchase cost index of substitutes
			1/
<u>Powdered (Whole and Blend)</u> ...	Cookies, dough	Fresh eggs	45
		Frozen eggs	62
		Broken in plant	57
	Eggnog, ice cream	Fresh eggs	45
		Frozen egg	62
		Broken in plant	57
<u>Powdered Yolk</u>	Salad dressings	Frozen yolk	85
		Liquid yolk	75
	Eggnog, concen-		
	trates	Frozen yolk	76
		Liquid yolk	66
<u>Dried Albumen</u>	Candy (whipping agents)	Frozen albumen	40
	Bakery use	Liquid	60
		Frozen	72

$$\frac{1}{\text{Cost index}} = \frac{\text{Purchase price of substitute}}{\text{Purchase price of equivalent amount of dried egg product.}} \times 100$$

A figure of 100 means equality in cost. Figures less than 100 mean that the substitute is lower in cost than the dried egg product.

and military uses, and exports have taken about another 15 percent of the output each year.

On the basis of the cost of potato solids, dehydrated potatoes are more expensive than fresh. Convenience and labor saving appear to account for the rapid growth and high rate of current usage of dehydrated potatoes.

Onions and Garlic: Most dried onions and garlic are marketed to food processors who use them as seasonings. Some go to away-from-home food service establishments and small quantities go to retail, export, and military purchases. The dehydrated products compete with fresh onions or garlic or their extracted juices or oils. They also have important utility in many uses due to their dry state. Advantages from convenience in storage, preparation, and use often favor the dried forms, even at higher prices than fresh forms.

A wide variety of prepared foods and mixes contain onion or garlic as flavoring. Cheese foods, cold cuts and sausages, potato chips, crackers and snack items, liquid and dry-mix salad dressings, catsup, and chili sauces were frequently reported uses. Because of the distinctive flavor of onion or garlic their presence is usually declared on the product label. Because of their compatibility with many processed food products and consumer awareness of them in foods, major outlets for the dried forms have developed, even though they are often only minor components in food products.

Other Vegetables: This group of dehydrated products includes 20 items of varying importance. About one-third of the "other vegetable" volume in 1965 was chili peppers. Carrots, bell peppers, and tomato powder combined amounted to another one-third. Asparagus, celery, cabbage, chives, corn, green beans, peas, pumpkin, green onions, shallots, parsley, lima beans, dill, mint, horseradish, and mushrooms as well as others comprise the remaining one-third. Amounts of each commodity dehydrated vary from year to year.

More than 20 firms operate "other vegetable" dehydration facilities and produce several different commodities. Most supplies come from contract production.

Market outlets for "other vegetables" are mostly other food processors (81 percent). Generally, dehydrated vegetables are rated inferior in quality to fresh or frozen forms and therefore food processors limit their use to products wherein dry ingredients are needed such as dry mixes for soups, sauces, casseroles, and gravies.

Many of the "other vegetables" are used to season, spice, or add variety to meat loaf, casseroles, meat pies, pizza garnishes, and other dishes. Like onions and garlic, they can create product diversity at a minimum added cost to the processor.

The market growth for "other vegetables" was shown to be closely related to growth of markets for dry food mixes and fully prepared or composite foods in which a change of a seasoning ingredient can produce a "new" product.

Fruits and Berries: Fruits and berries dried to less than 10 percent moisture are classed as dehydrated. Up to 1966, volume of all products was less than 20 million pounds a year. Berries were a minor part of this total, largely because of high costs for drying in freeze-dryer facilities. Dehydrated apples, prunes and dates were about 70 percent of dehydrated fruit and berry output.

Air-dried fruits with low moisture contents are marketed in much greater volumes and at much lower prices than dehydrated fruits. Specialty products with specific requirements for ingredients with less than 10 percent moisture are the major potential market for dehydrated fruits and berries. Such dry ingredients are required in breakfast cereals and packaged dry mixes (desserts, puddings, ice cream, and certain pancake, cookie, and cracker formulations). When a fruit ingredient is included in dry formulations, it must meet the low-moisture

criteria of the whole mixture. Uses of dehydrated fruits other than in these specific uses were not identified during the survey. Future market growth for dehydrated fruits and berries appears to be limited to uses as minor ingredients in some fruit-flavored dry food products.

Miscellaneous Foods: This group consists of many commodities and food products marketed in dried form. Beverage powders, for example, can be made from citrus or deciduous fruits, vegetables, or from extracted concentrates, such as coffee and tea. Product and market development of beverage powders from fruits and vegetables is centered on tomato powder and orange crystals for institutional, retail, and export outlets.

Instant rice is an important cereal grain product produced by dehydration. Users receive the conveniences of quicker rehydration and shorter home preparation time as a result of dehydration of pre-gelatinized rice kernels. Dehydration or

"instantizing" gives rice a convenience-food form to compete with other cereal grain and potato products.

Dehydrated mushrooms produced in the United States do not compete in quality or price with imported dried mushrooms. The freeze-dried domestic mushroom is priced 5 to 10 times higher than the air-dried imports (\$12 to \$15 per pound versus \$1.50 to \$2). The principal users of dried mushrooms are food processors and remanufacturers. At the time of the survey, remanufacturers reportedly preferred imported mushrooms on account of better appearance, less fragility, and lower prices. Since the domestic dehydrator must pay about 50 cents a pound for fresh mushrooms, and use 6 to 7 pounds to yield 1 pound of freeze-dried product, his markets are mostly specialty uses requiring under 3 percent moisture and strict sanitation control during processing.

DEMURRAGE AND THE FREIGHT CAR SITUATION

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Grain and lumber shippers have been particularly affected by freight car shortages in the past. The Interstate Commerce Commission has taken numerous steps over the past few years to ease such emergency shortages as created by the business expansion of the 1960's, and by the decline in numbers of cars available, particularly general purpose boxcars. Two of these steps were to issue Service Orders 979 and 1023. These orders provided for increased demurrage charges--the per-day fees paid by shippers and receivers for holding cars for loading and unloading beyond certain free time allowed (table 17).

ICC's objective in issuing these orders was to discourage shippers and receivers from using freight cars for temporary storage and from holding empty cars for excessive periods in anticipation of loading. The extent of such usage before the orders were issued would help determine how much the orders should alleviate the freight car situation.

Factors contributing to car shortages since the early 1960's and some corrective measures taken were discussed in the November 1966 and November 1968 issues of the Marketing and Transportation Situation (MTS-163 and MTS-171). This article discusses the history of demurrage and its role in the freight car situation, identifies similarities in the purposes of demurrage rates and per diem rates (daily rentals paid by railroads for cars owned by other railroads), and examines freight car utilization by shippers and receivers in loading and unloading and by railroads in switching and other uses in 1962-67, as reflected by ICC statistics.

History of Demurrage

Demurrage was first assessed by American railroads about 1874. ^{1/} The assessment of demurrage was not universal at that time nor were charges uniform. This led to situations detrimental to both the railroads and the public.

Table 17.--Demurrage charges and changes resulting from ICC Service Orders 979 and 1023

Days after placement ^{1/}	Per-day demurrage charges in effect			
	Prior to 5/1/66	Service Order No. : 979 effective 5/1/66 - 6/30/67	7/1/67 - 4/30/69	Service Order No. 1023 effective 5/1/69 -
First 2 days	Free	Free	Free	Free
Next 4 days	\$ 5.00	\$ 7.50	\$ 5.00	\$ 5.00
Next 4 days	10.00	15.00	10.00	25.00
All additional days	15.00	15.00	15.00	50.00

^{1/} The description here is nominal. Tariffs specify precisely how the count of days after placement is to be made, and the rules regarding "averaging." Perhaps as much as 80 percent of all traffic is subject to "averaging agreement" under which debits and credits for demurrage accounts are accumulated (Interstate Commerce Commission H-36).

^{1/} Knorst, William J., Transportation and Traffic Management, Volume 2, College of Advanced Traffic, Chicago, 1948, p. 598.

In 1908, a committee of the National Association of Railway Commissioners stressed the lack of, or the necessity for uniformity in demurrage rules and charges. ^{2/} A year later the committee reported its recommended code of uniform demurrage rules and charges. The code was adopted by the association and endorsed in principle by the Interstate Commerce Commission.

In the ICC Annual Report to Congress for 1909, two benefits of uniform demurrage rules and charges were stressed: (1) an increase in car efficiency through the securing of more prompt loading and unloading by consignors and consignees, and (2) assurance against discriminatory charges via rigid adherence to a uniform national practice applicable to interstate and intrastate shipments alike.

Various court cases have resulted from the enforcement of demurrage rules. Much of the litigation has been on the proper role of demurrage. It is well established legally that demurrage charges consist of two characteristics which were clearly defined by Mr. Justice Brandeis in Turner Lumber Co. v. C.M. & St. P. Ry.: "All demurrage charges have a double purpose. One is to secure compensation for the use of the car and of the track which it occupies. The other is to promote car efficiency by providing a deterrent against undue detention."

There have been periods when the application of regular demurrage charges were thought not to be sufficient to help relieve car shortages. Thus, the ICC has issued service orders imposing higher demurrage charges. These orders have applied to specific types of cars at times and have applied to all cars subject to demurrage at other times. While seasonal increases in demand for specific types of cars occur yearly, a general increase in business activity increases the demand for almost all types of cars.

Demurrage Versus Per Diem as a Regulator of Freight Car Utilization

Shippers and receivers in recent years have bought and leased many freight cars, but do not own the majority of cars placed for loading and unloading. Consequently, they expect reasonable charges for any use or delay of the cars beyond the "free" period of time for which the commodity transport rate includes compensation. Similarly, many freight cars using the lines of a particular railroad are not owned by that railroad. For example, during 1968, there were 1,525,080 serviceable freight cars on line of Class I railroads of which 776,841 did not belong to the railroads they were on. ^{3/}

If shippers and receivers are responsive to changes in demurrage rates in their loading and unloading of cars, the question arises as to why railroads should not be responsive to changes in per diem rates. Per diem rates have usually been quite low and have consisted of a small standard charge applied to each car regardless of the age, condition, original cost, or revenue-producing capacity of the car. Beginning January 1, 1964, a scale of rates was adopted, the per diem for a specific car being set on the basis of the original cost of the car less accumulated depreciation taken by the owning railroad. These rates ranged from \$2.16 for a car having an original cost less depreciation of \$1,000 or less to \$12.18 for cars of more than \$35,000 in the period January 1, 1965 - July 31, 1969. Beginning August 1, 1969, the ICC effected new methods of computing car rental costs which include charges for both days of use and mileage. Unlike demurrage, per diem rates have not varied in recent years as the revenue-producing potential or the freight car supply situation changed.

^{2/} Interstate Commerce Commission, unpublished material.

^{3/} ICC, Statement No. Q-240 (OS-C), p. 2.

In response to an amendment to Section 1 (14) (a) of the Interstate Commerce Act, the ICC in 1966 proposed an interim incentive increase of \$2.50 per car on the per diem rates then in effect. When the Commission asked the railroads for their opinion on this additional charge, more than 100 statements were filed. The diversity and the strength of the statements caused ICC not to order changes in per diem rates for incentive purposes. However, ICC Service Order 975, put into effect early in 1966, imposed performance standards on all railroads in placement, removal, forwarding, and light repairs of cars.

Freight Car Utilization by Shippers,
Receivers, and Railroads

There were substantial annual increases in revenue freight originated by Class I railroads between 1962 and 1966 and a decrease in 1967. The number of freight cars in service decreased each year up to 1966, which had an increase, and then decreased again in 1967 (table 18).

As business and traffic expands, one might expect to find shippers and receivers somewhat harder pressed to handle freight expeditiously. Loading and unloading crews and available space for working cars may not expand accordingly. Similarly, switching of cars at origin, in intermediate terminals, and at destination could be expected to experience similar difficulties. However, data on freight car activity do not bear out such expectations during 1962-67. Car-days devoted to switching and loading and unloading rose much less rapidly than the amount of revenue freight originated (figure 1 and table 19). Car-days in running service did not do as well as switching and loading and unloading time but tended to increase at about the same rate as revenue freight originated.

The data presented in tables 18 and 19 and figure 1 are aggregates for the United States, and some factors used in computing these aggregates are based on one-time studies by ICC or specific railroads.

Table 18. -- Freight cars in service and revenue freight originated by Class I railroads, 1962-67

Year	Railcars <u>1/</u>	Revenue freight originated <u>2/</u>
	<u>1,000 cars</u>	<u>1,000 tons</u>
1962	1923.7	1,233,597.3
1963	1893.9	1,284,847.6
1964	1878.5	1,354,612.4
1965	1878.5	1,387,423.0
1966	1903.5	1,448,901.0
1967	1900.5	1,407,628.2

1/ Interstate Commerce Commission, Transport Statistics in the United States, Yearly 1962-67, Part 1: Table 163; Section A-II and Section B; and Part 9: Table 1. This includes all cars of railroads, car companies, terminal companies and shippers.

2/ Interstate Commerce Commission, Freight Commodity Statistics, Yearly 1962-1967.

Thus, it is not feasible at this stage of research to reach any conclusion about comparative performances of shippers, receivers, and railroads in their use of cars, or of the impacts on their performances of the various changes in demurrage and per diem rates described above.

Despite the limitation of the data available for analysis, the data in table 19 indicate that both switching and "unallocated" activities should have more

attention than loading and unloading as potential areas for obtaining relief of car shortages. Cars spend approximately 18 percent of car-day activity in loading and unloading compared with 82 percent in railroad operations. Modest improvements in car utilization by railroads would have considerably more impact on cars available for service than would a comparable improvement by shippers and receivers.

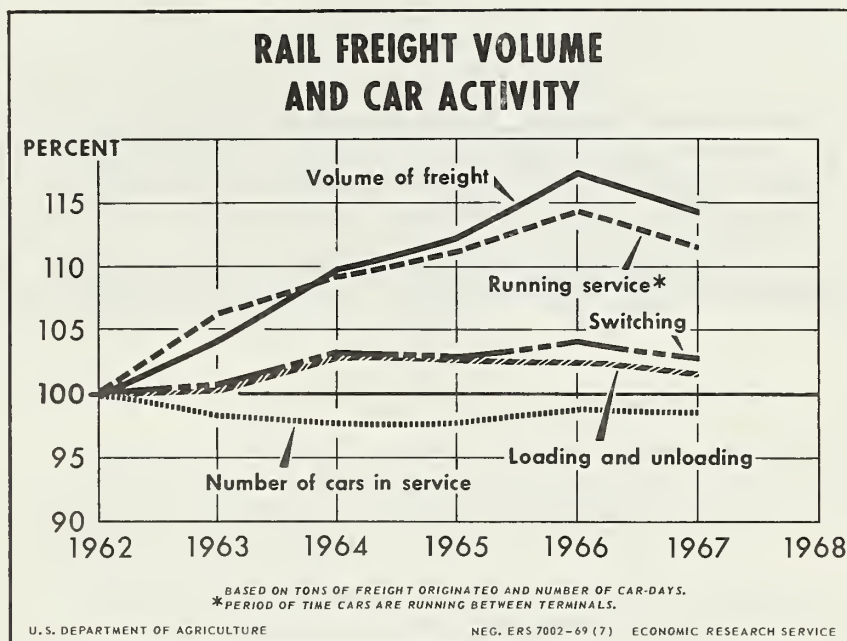


Figure 1

Table 19.--Car-day activity, all freight cars in service, 1962-67 1/

Year	Switching	Loading and unloading	Running service	Total active car-days	Unallocated car-days and repair	Total
<u>Million car-days</u>						
1962	234.6	123.1	54.9	412.6	289.6	702.2
1963	236.6	123.6	58.4	418.6	272.7	691.3
1964	242.6	126.9	60.0	429.5	256.1	685.6
1965	241.9	126.5	61.1	429.5	256.2	685.7
1966	244.8	126.2	62.8	433.8	260.9	694.7
1967	240.8	125.0	61.2	427.0	266.7	693.7

1/ Car-day activities were developed from data in the Interstate Commerce Commission's Rail Form A and Transport Statistics of the United States for the years 1962-67. Data for switching and loading are from Sheet 3, Form 1, of Rail Form A. To include all freight cars subject to demurrage rules, the figures in Line 51 of Sheet 3, Form 1, were applied to the formulas. Running service was taken from Sheet 1, Form 1, corrected to exclude caboose cars as a part of total car-days. The total of all freight cars (table 18) was multiplied by 365 to give total car-days. Unallocated car-days, which include repair time, were total car-days less total active car-days.

SELECTED NEW PUBLICATIONS

1. "Analysis of Factors Affecting Time Requirements for Distributing Milk on Wholesale and Retail Routes in Georgia," by J. D. Goodwin, J. C. Purcell, and J. C. Elrod, Ga. Agr. Expt. Sta., Res. Bull.-52, Jan. 1969. University of Georgia, College of Agr. Expt. Stats., Athens, Ga.
2. "Charges for Ginning Cotton, Costs of Selected Services Incident to Marketing, and Related Information, Season 1968-69," U.S. Dept. Agr., Econ. Res. Ser., ERS-2 (1969) May 1969.
3. "Commercial Floriculture and Related Products," by Richard Hall and Stephen M. Raleigh, Jr., U.S. Dept. Agr., Agr. Res. Ser., MRR-855, July 1969.
4. "Distribution of Rice in the United States, 1966-67," by J. C. Eiland, U.S. Dept. Agr., Econ. Res. Ser., ERS-408, Apr. 1969.
5. "Improvements in Grades of Hogs Slaughtered from 1960-61 to 1967-68," by Donald B. Agnew, U.S. Dept. Agr., Econ. Res. Ser., MRR-849, May 1969.
6. "Marketing Woody Ornamentals: Practices and Trends of Nurseries in Louisiana," by Stephen M. Raleigh, Jr. and Jules V. Powell, U.S. Dept. Agr., Econ. Res. Ser., ERS-409, May 1969.
7. "Marketing Woody Ornamentals: Practices and Trends of Nurseries in the South," SM-33 Technical Committee, Southern Cooperative Series Bulletin No. 143, April 1969. (Copies available from any of the eleven cooperating experiment stations in the Southern Region).
8. "Organization and Structure of the Red Rice Valley Potato Industry," by John K. Hanes, Dept. Agr. Econ., University of Minnesota (in cooperation with the U.S. Dept. of Agr.), Economic Study Report No. S68-3, March 1969.
9. "Packaging Produce in Trays at the Central Warehouse," by James J. Karitas, U.S. Dept. Agr., Agr. Res. Ser., MRR-827, February 1969.
10. "Processing, Storage, and Selected Storage Service Costs for Flue-Cured Tobacco in Commercial Facilities, 1966/67 and Estimated 1968," by N. A. Wynn, Jr., Donn A. Reimund, and J. W. H. Brown, U.S. Dept. Agr., Econ. Res. Ser., ERS-411, May 1969.
11. "Processing, Storage, and Selected Storage Service Costs for Maryland Tobacco in Commercial Facilities, 1966/67 and Estimated 1968," by N. A. Wynn, U.S. Dept. Agr., Econ. Res. Ser., ERS-413, May 1969.

:		:
:	Unless otherwise indicated, items listed are Economic	:
:	Research Service publications and single copies may be	:
:	obtained free from the Division of Information, Office of	:
:	Management Services, U.S. Department of Agriculture,	:
:	Washington, D. C. 20250.	:
:	Publications issued by State Agricultural Experiment	:
:	Stations may be obtained from the issuing Station	:
:		:

Table 20.--Farm food products: Retail cost and farm value, April-June 1969, January-March 1969, April-June 1968 and 1957-59 average

Product 1/	Retail unit	Retail cost						Net farm value 2/					
		April	January	April	Percentage	Percentage	April	January	April	Percentage	Percentage	April	Percentage
		June	March	June	1957-59	1957-59	June	March	June	1957-59	1957-59	June	1957-59
		1969	1969	1968	average	from	1969	1969	1968	average	from	1969	1968
		Dollars	Dollars	Dollars	Dollars	Percent	Percent	Dollars	Dollars	Dollars	Dollars	Percent	Percent
Market basket		1,160.88	3/1,138.13	1,113.59	982.65	2.0	4.2	477.18	3/452.78	436.38	387.87	5.4	9.3
Meat products		349.90	332.18	322.23	285.05	5.3	8.6	204.18	179.65	171.74	154.47	13.7	18.9
Dairy products	Average	206.63	205.54	200.96	173.33	.5	2.8	100.20	98.78	96.24	77.85	1.4	4.1
Poultry and eggs	quantities	89.97	94.06	82.07	93.02	-4.3	9.6	49.43	3/54.59	44.08	56.28	-9.5	12.1
Bakery and cereal products 4/	purchased												
All ingredients	per urban	172.13	3/171.22	168.93	148.40	.5	1.9	33.85	33.11	33.52	30.55	2.2	1.0
Grain	wage-earner	--	--	--	--	--	--	25.03	24.70	25.78	23.40	1.3	-2.9
All fruits and vegetables	and												
Fresh fruits and vegetables	clerical-	253.56	3/247.06	252.39	202.96	2.6	.5	70.01	3/67.00	71.49	50.05	4.5	-2.1
Fresh fruits	worker	128.61	3/123.20	129.39	91.15	4.4	-6	42.62	40.94	45.47	28.70	4.1	-6.3
Fresh vegetables	household	51.33	3/48.64	53.61	36.26	5.5	-4.3	17.27	16.57	19.85	12.26	4.2	-13.0
Processed fruits and	in	77.28	74.56	75.78	54.89	3.6	2.0	25.35	24.37	25.62	16.44	4.0	-1.1
vegetables	1960-61												
Fats and oils		124.95	3/123.86	123.00	111.81	.9	1.6	27.39	3/26.06	26.02	21.35	5.1	5.3
Miscellaneous products		37.84	3/37.77	37.95	37.56	.2	-.3	10.17	10.31	10.36	11.19	-1.4	-1.8
		50.85	50.30	49.06	42.33	1.1	3.6	9.34	3/9.34	8.95	7.48	0	4.4
		Cents	Cents	Cents	Cents	Percent	Percent	Cents	Cents	Cents	Cents	Percent	Percent
Beef, Choice grade	Pound	95.8	90.0	86.6	78.1	6.4	10.6	62.4	55.3	52.5	48.3	12.8	18.9
Lamb, Choice grade	Pound	100.8	96.7	93.7	70.0	4.2	7.6	57.6	53.9	53.5	40.2	6.9	7.7
Pork	Pound	69.9	67.7	66.4	60.5	3.2	5.3	38.8	34.7	33.8	31.0	11.8	14.8
Butter	Pound	84.3	84.2	83.5	73.2	.1	1.0	62.1	3/60.1	60.4	52.6	3.3	2.8
Cheese, American process	1/2 pound	46.6	45.6	44.2	32.3	2.2	5.4	20.9	20.3	19.5	14.2	3.0	7.2
Ice cream	gallon	80.5	81.1	80.6	84.2	-.7	-1	27.4	26.6	26.4	21.0	3.0	3.8
Milk, evaporated	14 1/2-ounce can	17.6	17.4	17.0	14.5	1.1	3.5	8.7	8.4	8.4	6.2	3.6	3.6
Milk, fresh													
Home delivered	1/2 gallon	61.7	61.5	59.6	50.8	.3	3.5	27.4	27.3	26.4	21.9	.4	3.8
Sold in stores	1/2 gallon	54.6	54.5	53.4	46.6	.2	2.2	27.4	27.3	26.4	21.9	.4	3.8
Chickens, frying, ready-to-cook ..	Pound	41.9	40.1	40.1	43.5	4.5	4.5	20.4	20.4	20.0	24.4	0	2.0
Eggs, Grade A large	Dozen	55.3	63.6	47.2	56.2	-13.1	17.2	34.4	3/41.6	27.8	36.1	-17.3	23.7
Bread, white													
All ingredients	Pound	22.9	22.8	22.2	18.9	.4	3.2	3.3	3.2	3.3	3.0	3.1	0
Wheat	Pound	--	--	--	--	--	--	2.5	2.5	2.6	2.4	0	-3.8
Bread, whole or cracked wheat ..	Pound	31.2	30.8	29.8	--	1.3	4.7	3.2	3.2	3.3	--	0	-3.0
Cookies, creme filled	Pound	50.0	49.9	50.2	--	.2	.4	4.5	4.5	4.5	--	0	0
Corn flakes	12 ounces	31.1	31.4	31.2	24.5	-1.0	-3	2.7	2.4	2.5	2.4	12.5	8.0
Flour, white	5 pounds	58.3	57.9	58.6	53.3	.7	-5	20.2	20.1	20.8	18.8	.5	-2.9
Apples	Pound	25.8	23.6	25.2	16.1	9.3	2.4	10.2	9.5	11.0	5.0	7.4	-7.3
Grapefruit	Each	13.6	3/13.9	16.1	10.7	-2.2	-15.5	2.5	2.5	3.9	2.7	0	-35.9
Lemons	Pound	28.6	3/27.1	26.6	18.4	5.5	7.5	9.1	9.1	8.0	4.2	0	13.8
Oranges	Dozen	82.3	82.9	91.1	66.0	-.7	-9.7	17.8	21.7	26.5	23.2	-18.0	-32.8
Cabbage	Pound	12.4	13.0	12.5	8.7	-4.6	-.8	3.2	3.6	3.5	2.4	-11.1	-8.6
Carrots	Pound	16.6	16.4	17.0	14.5	1.2	-2.4	5.1	5.2	4.8	3.7	-1.9	6.2
Celery	Pound	19.1	16.8	16.6	15.3	13.7	15.1	7.3	5.0	6.4	4.4	46.0	14.1
Cucumbers	Pound	27.9	34.5	30.9	--	-19.1	-9.7	8.6	11.9	9.7	--	-27.7	-11.3
Lettuce	Head	31.3	29.8	26.5	22.6	5.0	18.1	10.5	11.6	7.8	6.0	-9.5	34.6
Onions	Pound	13.3	13.0	17.4	10.1	2.3	-23.6	3.6	2.8	6.8	3.4	28.6	-47.1
Peppers, green	Pound	42.9	44.6	47.8	--	-3.8	-10.3	16.0	16.7	21.2	--	-4.2	-24.5
Potatoes	10 pounds	82.5	76.9	79.4	58.3	7.3	3.9	27.5	23.8	25.1	17.8	15.5	9.6
Tomatoes	Pound	45.8	42.0	44.2	30.1	9.0	3.6	16.3	15.8	18.1	10.6	3.2	-9.9
Peaches, canned	No. 2 1/2 can	34.4	3/34.6	35.6	34.3	-.6	-3.4	6.1	6.1	6.7	6.1	0	-9.0
Pears, canned	No. 2 1/2 can	50.5	51.0	54.3	--	-1.0	-7.0	10.3	3/10.3	15.9	--	0	-35.2
Beets, canned	No. 303 can	18.2	18.2	18.0	--	0	1.1	1.4	1.4	1.3	--	0	7.7
Corn, canned	No. 303 can	23.7	3/23.9	24.4	17.8	-.8	-2.9	3.0	3.0	3.0	2.4	0	0
Peas, canned	No. 303 can	24.7	3/24.6	24.8	21.0	.4	-.4	3.8	3.8	3.8	3.1	0	0
Tomatoes, canned	No. 303 can	19.6	19.7	20.6	15.6	-.5	-4.9	3.7	3.7	3.9	2.3	0	-5.1
Orange juice, concentrate, frozen	6-ounce can	24.9	23.3	21.0	23.4	6.9	18.6	11.2	10.0	9.9	8.2	12.0	13.1
French fried potatoes, frozen ...	9 ounces	16.1	15.9	15.3	--	1.3	5.2	3.3	2.9	2.1	--	13.8	57.1
Peas, frozen	10 ounces	20.9	21.0	20.7	19.9	-.5	1.0	3.6	3.6	3.7	3.2	0	-2.7
Beans, dried	Pound	19.6	19.6	19.5	16.3	0	.5	8.6	8.6	8.5	6.9	0	1.2
Margarine	Pound	27.8	27.7	28.0	27.4	.4	-.7	7.0	7.2	7.2	7.8	-2.8	-2.8
Peanut butter	12-ounce jar	45.5	45.4	43.8	41.4	.2	3.9	15.7	15.7	15.2	14.1	0	3.3
Salad and cooking oil	24-ounce bottle	51.9	52.1	52.2	--	-.4	-.6	11.7	11.9	12.3	--	-1.7	-4.9
Vegetable shortening	3 pounds	82.9	3/82.6	84.1	90.4	.4	-1.4	24.9	25.3	25.7	28.2	-1.6	-3.1
Sugar	5 pounds	61.9	61.1	60.9	54.5	1.3	1.6	25.6	3/25.6	24.6	20.2	0	4.1
Spaghetti with sauce, canned	15 1/2-ounce can	17.4	17.2	16.8	--	1.2	3.6	2.1	2.1	2.2	--	0	-4.5

1/ Product groups include more items than those listed in this table. For example, in addition to the products listed--Choice beef, lamb, and pork (major products except lard)--the meat products group includes lower grades of beef, the minor edible pork products, and veal.

2/ Gross farm value adjusted to exclude imputed value of byproducts obtained in processing.

3/ Many retail cost and farm value figures for April-June 1968, have been revised; figures in other columns revised as indicated.

4/ For the bakery products group and the individual wheat products, the net farm value is based on the market price of wheat received by farmers plus the cost of the marketing certificate to millers. This cost is returned to farmers complying with the Wheat Program.

Table 21.--Farm food products: Farm-retail spread and farmer's share of the retail cost, April-June 1969, January-March 1969, April-June 1968 and 1957-59 average.

Product 1/	Retail unit	Farm-retail spread 2/						Farmer's share			
		April-June 1969	January-March 1969	April-June 1968	1957-59 average	Percentage change from-		April-June 1969	January-March 1969	April-June 1968	1957-59 average
						January-March 1969	April-June 1968				
		Dollars	Dollars	Dollars	Dollars	Percent	Percent	Percent	Percent	Percent	Percent
Market basket		683.70	3/685.35	677.21	594.78	-2	1.0	41	40	39	39
Meat products		145.72	152.53	150.49	130.58	-4.5	-3.2	58	54	53	54
Dairy products	Average quantities purchased	106.43	106.76	104.72	95.48	-3	1.6	48	48	48	45
Poultry and eggs	per urban wage-earner and	40.54	3/39.47	37.99	36.74	2.7	6.7	55	58	54	61
Bakery and cereal products 4/	clerical-	138.28	3/138.11	135.41	117.85	.1	2.1	20	19	20	21
All ingredients	worker	183.55	3/180.06	180.90	152.91	1.9	1.5	28	27	28	25
Grain	household	85.99	3/82.26	83.92	62.45	4.5	2.5	33	33	35	31
All fruits and vegetables	in	34.06	3/32.07	33.76	24.00	6.2	.9	34	34	37	34
Fresh fruits and vegetables ..	1960-61	51.93	50.19	50.16	38.45	3.5	3.5	33	33	34	30
Fresh fruits											
Fresh vegetables											
Processed fruits and vegetables		97.56	3/97.80	96.98	90.46	-2	.6	22	21	21	19
Fats and oils		27.67	3/27.46	27.59	26.37	.8	.3	27	27	27	30
Miscellaneous products		41.51	3/40.96	40.11	34.85	1.3	3.5	18	19	3/18	18
		Cents	Cents	Cents	Cents	Percent	Percent	Percent	Percent	Percent	Percent
Beef, Choice grade	Pound	33.4	34.7	34.1	29.8	-3.7	-2.1	65	61	61	62
Lamb, Choice grade	Pound	43.2	42.8	40.2	29.8	.9	-7.5	57	56	3/57	57
Pork	Pound	31.1	33.0	32.6	29.5	-5.8	-4.6	56	51	51	51
Butter	Pound	22.2	3/24.1	23.1	20.6	-7.9	-3.9	74	3/71	72	72
Cheese, American process	1/2 pound	25.7	25.3	24.7	18.1	1.6	4.0	45	45	44	44
Ice cream	1/2 gallon	53.1	54.5	54.2	63.2	-2.6	-2.0	34	33	33	25
Milk, evaporated	1 1/2-ounce can	8.9	9.0	8.6	8.3	-1.1	3.5	49	48	49	43
Milk, fresh											
Home delivered	1/2 gallon	34.3	34.2	33.2	28.9	.3	3.3	44	44	44	43
Sold in stores	1/2 gallon	27.2	27.2	27.0	24.7	0	.7	50	50	49	47
Chickens, frying, ready-to-cook ..	Pound	21.5	19.7	20.1	19.1	9.1	7.0	49	51	50	56
Eggs, Grade A large	Dozen	20.9	3/22.0	19.4	20.1	-5.0	7.7	62	65	59	64
Bread, white											
All ingredients	Pound	19.6	19.6	18.9	15.9	0	3.7	14	14	15	16
Wheat	Pound	--	--	--	--	--	--	11	11	12	13
Bread, whole or cracked wheat ..	Pound	28.0	27.6	26.5	--	1.4	5.7	10	10	11	--
Cookies, creme filled.....	Pound	45.5	45.4	45.7	--	.2	-4	9	9	9	--
Corn flakes	12 ounces	28.4	29.0	28.7	22.1	-2.1	-1.0	9	8	8	10
Flour, white	5 pounds	38.1	37.8	37.8	34.5	.8	.8	35	35	35	35
Apples	Pound	15.6	3/14.1	14.2	11.1	10.6	9.9	40	3/40	3/44	31
Grapefruit	Each	11.1	3/11.4	12.2	8.0	-2.6	-9.0	18	18	24	25
Lemons	Dozen	19.5	3/18.0	18.6	14.2	8.3	4.8	32	34	3/30	23
Oranges	Dozen	64.5	3/61.2	64.6	42.8	5.4	-2	22	26	29	35
Cabbage	Pound	9.2	9.4	9.0	6.3	-2.1	2.2	26	28	28	28
Carrots	Pound	11.5	11.2	12.2	10.8	2.7	-5.7	31	32	28	26
Celery	Pound	11.8	11.8	10.2	10.9	0	15.7	38	30	39	29
Cucumbers	Pound	19.3	22.6	21.2	--	-14.6	-9.0	31	34	32	--
Lettuce	Head	20.8	18.2	18.7	16.6	14.3	11.2	34	39	29	27
Onions	Pound	9.7	10.2	10.6	6.7	-4.9	-8.5	27	22	39	34
Peppers, green	Pound	26.9	27.9	26.6	--	-3.6	1.1	37	37	44	--
Potatoes	10 pounds	55.0	53.1	54.3	40.5	3.6	1.3	33	31	3/32	31
Tomatoes.....	Pound	29.5	26.2	26.1	19.5	12.6	13.0	36	38	41	35
Peaches, canned	No. 2 1/2 can	28.3	3/28.5	28.9	28.2	-7	-2.1	18	3/18	19	18
Pears, canned	No. 2 1/2 can	40.2	3/40.7	38.4	--	-1.2	4.7	20	20	29	--
Beets, canned	No. 303 can	16.8	16.8	16.7	--	0	.6	8	8	7	--
Corn, canned	No. 303 can	20.7	3/20.9	21.4	15.4	-1.0	3.3	13	3/13	12	13
Peas, canned	No. 303 can	20.9	3/20.8	21.0	17.9	.5	-5	15	15	15	15
Tomatoes, canned	No. 303 can	15.9	16.0	16.7	13.3	-6	-4.8	19	19	19	15
Orange juice, concentrate, frozen	6-ounce can	13.7	13.3	11.1	15.2	3.0	23.4	45	43	47	35
French fried potatoes, frozen ...	9 ounces	12.8	13.0	13.2	--	-1.5	-3.0	20	18	14	--
Peas, frozen	10 ounces	17.3	17.4	17.0	16.7	-6	1.8	17	17	18	16
Beans, dried.....	Pound	11.0	11.0	11.0	9.4	0	0	44	44	44	42
Margarine	Pound	20.8	20.5	20.8	19.6	1.5	0	25	26	26	28
Peanut butter	12-ounce jar	29.8	29.7	28.6	27.3	.3	4.2	35	35	35	34
Salad and cooking oil	24-ounce bottle	40.2	40.2	39.9	--	0	.8	23	23	3/24	--
Vegetable shortening	3 pounds	58.0	3/57.3	58.4	62.2	1.2	-7	30	31	3/31	31
Sugar	5 pounds	36.3	3/35.5	36.3	34.3	2.3	0	41	42	3/40	37
Spaghetti with sauce, canned	1 1/2-ounce can	15.3	15.1	14.6	--	1.3	4.8	12	12	13	--

1/ Product groups include more items than those listed in this table. For example, in addition to the products listed--Choice beef, lamb, and pork (major products except lard)--the meat products group includes lower grades of beef, the minor edible pork products, and veal.

2/ The farm-retail spread is the difference between the retail cost and the net farm value shown in table on opposite page.

3/ Most farm-retail spread figures for April-June 1968 have been revised; figures in other columns revised as indicated.

4/ For the bakery products group and the individual wheat products, the farmer's share is based on the market price of wheat received by farmers plus the cost of the marketing certificate to millers. This cost is returned to farmers complying with the Wheat Program.

Table 22.--Farm food products: Retail cost, farm value of equivalent quantities sold by producers, byproduct allowance, farm-retail spread, and farmer's share of retail cost, April-June 1969

Product ^{1/}	Farm equivalent	Retail unit	Retail cost	Gross farm value	Byproduct allowance	Net farm value	Farm-retail spread	Farmer's share
			Dollars	Dollars	Dollars	Dollars	Dollars	Percent
Market basket			1,160.88	---	---	477.18	683.70	41
Meat products			349.90	---	---	204.18	145.72	58
Dairy products			206.63	---	---	100.20	106.43	48
Poultry and eggs			89.97	---	---	49.43	40.54	55
Bakery and cereal products ^{3/}	Farm produce equivalent	Average quantities purchased						
All ingredients	to products bought	per urban	172.13	---	---	33.85	138.28	20
Grain	per urban wage-earner and clerical-worker household in 1960-61	wage-earner	---	30.18	5.15	25.03	---	15
All fruits and vegetables			253.56	---	---	70.01	183.55	28
Fresh fruits and vegetables		clerical-worker	128.61	---	---	42.62	85.99	33
Fresh fruits		household	51.33	---	---	17.27	34.06	34
Fresh vegetables		in	77.28	---	---	25.35	51.93	33
Processed fruits and vegetables		1960-61	124.95	---	---	27.39	97.56	22
Fats and oils			37.84	27.88	17.71	10.17	27.67	27
Miscellaneous products			50.85	---	---	9.34	41.51	18
			Cents	Cents	Cents	Cents	Cents	Percent
Beef, Choice grade	2.25 lb. Choice grade cattle	Pound	95.8	68.2	5.8	62.4	33.4	65
Lamb, Choice grade	2.33 lb. lamb	Pound	100.8	65.3	7.7	57.6	43.2	57
Pork	2.00 lb. hogs	Pound	69.9	43.9	5.1	38.8	31.1	56
Butter	Cream and whole milk	Pound	84.3	100.9	38.4	62.1	22.2	74
Cheese, American process	Milk for American cheese	$\frac{1}{2}$ pound	46.6	21.7	.8	20.9	25.7	45
Ice cream	Cream, milk, and sugar	$\frac{1}{2}$ gallon	80.5	---	---	27.4	53.1	34
Milk, evaporated	Milk for evaporating	$1\frac{1}{2}$ -ounce can	17.6	8.9	.2	8.7	8.9	49
Milk, fresh								
Home delivered	4.39 lb. Class I milk	$\frac{1}{2}$ gallon	61.7	---	---	27.4	34.3	44
Sold in stores	4.39 lb. Class I milk	$\frac{1}{2}$ gallon	54.6	---	---	27.4	27.2	50
Chickens, frying, ready-to-cook	1.37 lb. broiler	Pound	41.9	---	---	20.4	21.5	49
Eggs, Grade A large	1.03 dozen	Dozen	55.3	---	---	34.4	20.9	62
Bread, white								
All ingredients	Wheat and other ingredients	Pound	22.9	---	---	3.3	19.6	14
Wheat .....	.877 lb. wheat	Pound	---	2.9	.4	2.5	---	11
Bread, whole or cracked wheat .....	.708 lb. wheat	Pound	31.2	2.4	.2	3.2	28.0	10
Cookies, cream filled .....	.528 lb. wheat	Pound	50.0	---	---	4.5	45.5	9
Corn flakes	2.87 lb. yellow corn	12 ounces	31.1	$\frac{1}{2}$ /6.2	$\frac{1}{2}$ /3.5	$\frac{1}{2}$ /2.7	28.4	9
Flour, white	6.8 lb. wheat	5 pounds	58.3	22.9	2.6	20.2	38.1	35
Apples	1.04 lb. apples	Pound	25.8	---	---	10.2	15.6	40
Grapefruit	1.03 grapefruit	Each	13.6	---	---	2.5	11.1	18
Lemons	1.04 lb. lemons	Pound	28.6	---	---	9.1	19.5	32
Oranges	1.03 doz. oranges	Dozen	82.3	---	---	17.8	64.5	22
Cabbage	1.08 lb. cabbage	Pound	12.4	---	---	3.2	9.2	26
Carrots	1.03 lb. carrots	Pound	16.6	---	---	5.1	11.5	31
Celery	1.08 lb. celery	Pound	19.1	---	---	7.3	11.8	38
Cucumbers	1.09 lb. cucumbers	Pound	27.9	---	---	8.6	19.3	31
Lettuce	1.88 lb. lettuce	Head	31.3	---	---	10.5	20.8	34
Onions	1.06 lb. onions	Pound	13.3	---	---	3.6	9.7	27
Peppers, green	1.09 lb. peppers	Pound	42.9	---	---	16.0	26.9	37
Potatoes	10.42 lb. potatoes	10 pounds	82.5	---	---	27.5	55.0	33
Tomatoes	1.18 lb. tomatoes	pound	45.8	---	---	16.3	29.5	36
Peaches, canned	1.60 lb. Calif. cling peaches	No. 2 $\frac{1}{2}$ can	34.4	---	---	6.1	28.3	18
Pears, canned	1.85 lb. pears for canning	No. 2 $\frac{1}{2}$ can	50.5	---	---	10.3	40.2	20
Beets, canned	1.24 lb. beets for canning	No. 303 can	18.2	---	---	1.4	16.8	8
Corn, canned	2.495 lb. sweet corn	No. 303 can	23.7	---	---	3.0	20.7	13
Peas, canned .....	.69 lb. peas for canning	No. 303 can	24.7	---	---	3.8	20.9	15
Tomatoes, canned	1.84 lb. tomatoes for canning	No. 303 can	19.6	---	---	3.7	15.9	19
Orange juice, concentrate, frozen ...	3.86 lb. oranges	6-ounce can	24.9	---	---	11.2	13.7	45
French fried potatoes, frozen	1.38 lb. potatoes	9 ounces	16.1	---	---	3.3	12.8	20
Peas, frozen .....	.70 lb. peas for freezing	10 ounces	20.9	---	---	3.6	17.3	17
Beans, dried	1.00 lb. Mich. dry beans	Pound	19.6	---	---	8.6	11.0	44
Margarine	Soybeans, cottonseed, and milk	Pound	27.8	20.1	13.1	7.0	20.8	25
Peanut butter	1.33 lb. peanuts	12-ounce jar	45.5	---	---	15.7	29.8	35
Salad and cooking oil	Soybeans, cottonseed, and corn	24-ounce bottle	51.9	45.5	33.8	11.7	40.2	23
Vegetable shortening	Soybeans and cottonseed	3 pounds	82.9	71.1	46.2	24.9	58.0	30
Sugar	Sugar beets and cane	5 pounds	61.9	27.2	1.6	5/25.6	5/36.3	5/41
Spaghetti with sauce, canned	Wheat, tomatoes, cheese, sugar	$1\frac{1}{2}$ -ounce can	17.4	---	---	2.1	15.3	12

^{1/} Product groups include more items than those listed in this table. For example, in addition to the products listed--Choice beef, lamb, and pork (major products except lard)--the meat products group includes lower grades of beef, the minor edible pork products, and veal.

^{2/} Gross farm value adjusted to exclude imputed values of byproducts obtained in processing.

^{3/} For the bakery products group and the individual wheat products, gross farm value, byproduct allowance, net farm value, and farmer's share are based on the market price of wheat received by farmers plus the cost of the marketing certificate to millers. This cost is returned to farmers complying with the Wheat Program.

^{4/} Based on market price of corn received by farmers; no allowance made for price support payment received by farmers who comply with the Federal Feed Grain Program.

^{5/} Net farm value adjusted for Government payments to producers was 29.4 cents, farm-retail spread adjusted for Government processors tax was 33.6 cents, farmer's share of retail cost based on adjusted farm value was 47 percent.

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